JANUARY 11, 1954

REVIEW AND OUTLOOK NUMBER

RAILWAY AGE

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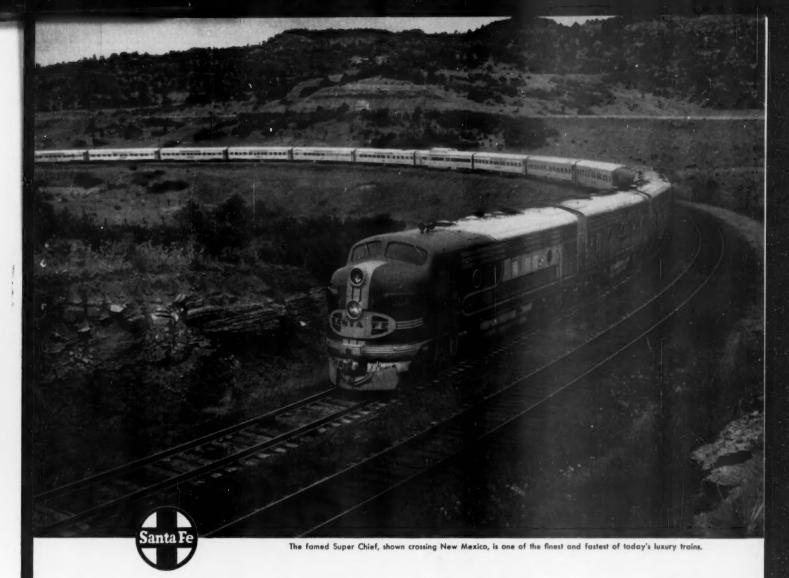
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RAILWAY AGE

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January 11, 1954

Vol. 136, No. 2

Week at a Glance

- FORUM: 1953 was a solid foundation—1954 offers new opportunities for a dynamic railroad industry. 107
- A review of railway operations in 1953—by J. Elmer Monroe, vice-president, Association of American Railroads.
- Pan Americana and "piggyback" were two—but only two—of the highlights of the railroad year. 133
- Capital outlays were over \$1½ billion in 1953; 1954 shapes up like the sixth consecutive billon-dollar year.
- Railroad purchases in 1953 continued high but the volume may drop somewhat this year, if traffic declines with the generally anticipated diminution of general business activity.

 149
- There was little activity in railroad finance in 1953, with government policies and labor demands overshadowing the industry's excellent overall financial condition.
- Passenger-train cars ordered in 1953 numbered 418.

 Though traffic and revenues were down, services were further improved.

 158
- Shops and shop equipment have been revolutionized by advent of diesel power. 162
- Railroads bought more M/W machines in 1953, as a means of counteracting high wage rates. 164
- Wanted: potent control data. More than ever before, railroad management is demanding financial and operating figures on a "current" basis.

 166



The safe progress of a train and its cargo depends upon many widely separated people working closely together through dependable communications—teamwork which many railroads insure with a P-A-X Business Telephone System, a product of Automatic Electric Company.

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Current Statistics

Operating revenues, eleven mor	nths
1953\$	9,848,917,002
1952	9,646,522,076
Operating expenses, eleven mon	ths
1953\$	
1952	7,341,809,527
Taxes, eleven months	
1953\$	1,162,856,463
1952	1,164,820,228
Net railway operating income, e	
1953\$	
1952	
Net income, estimated, eleven m	
1953\$	
1952	717,000,000
Average price railroad stocks	
January 4, 1954	57.94
January 5, 1953	69.61
Carloadings revenue freight	
Fifty-two weeks, 1953	38,302,762
Fifty-two weeks, 1952	37,985,155
Average daily freight car surplus	
December 26, 1953	111,681
December 27, 1952	45.264
Average daily freight car shorta	
December 26, 1953	135
December 27, 1952	317
Freight cars delivered	0.17
November 1953	6.137
November 1952	5,929
Freight cars on order	0,727
December 1, 1953	31.869
December 1, 1952	87.657
Freight cars held for repairs	07,007
December 1, 1953	97,679
December 1, 1952	96.085
WULCHINGT 1, 1752	70,003

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX AND BY THE ENGINEERING INDEX SERVICE. RAILWAY AGE INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE.

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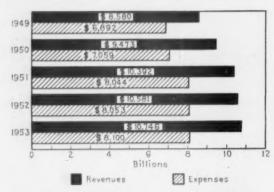
Week at a Glance CONTINUED

- Signal construction was above average in 1953, with further growth in the cards for 1954.
- Maintenance-of-way activity was on a stable basis in 1953, with expenditures for fixed-property upkeep rising slightly to a new high. 173
- , Electrical highlights of 1953—a year of further progress in railroad applications of electric power. 176
 - The communications outlook is bright, with 1953 installations topping the previous five-year average, and a continued high volume probable in 1954.
 - Calendar of labor and wage events for 1953. 183
 - Freight-train cars ordered in 1953 numbered only 32,-114; the car fleet is still about 75,000 units short of the 1.850,000-car "goal."
- Motive power ordered in 1953 for service in the U.S.

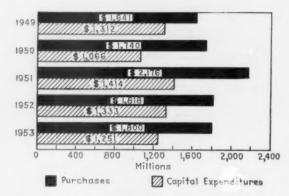
 —again almost all diesel—totaled 1,925 units. 189
- What's ahead for Cuba's roads? For the near-term, the outlook is gloomy; long-range, it is far more favorable.

 195
- Canadian railroads look ahead, despite disappointment over 1953 results and uncertainty as to future rates, costs and competition.
- Mexican lines' business slumped in 1953—but lower earnings did not mean an end to their big rehabilitation program. 200
- Construction held at a high level in 1953, with yard and terminal projects topping the year's list of property-betterment activities.

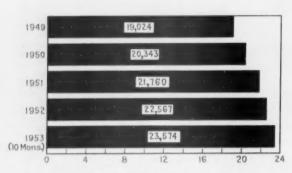
1953 AT A GLANCE



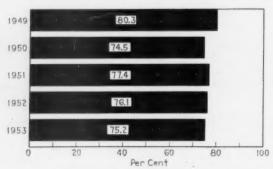
1 OPERATING REVENUES and OPERATING EX-PENSES of Class I railroads both reached new all-time peaks in 1953. But because . . .



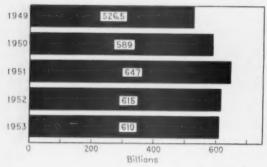
2 CAPITAL EXPENDITURES, exceeding \$1 billion for the fifth consecutive year, made possible further operating gains, . . .



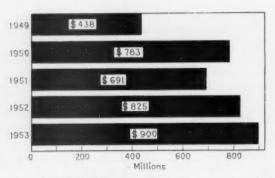
NET TON-MILES PER FREIGHT-TRAIN-HOUR, best overall indicator of operating efficiency, also reached a new high, and . . .



OPERATING RATIO, for the full year, will, it is estimated, touch its lowest point since 1950. As a result, and even though . . .

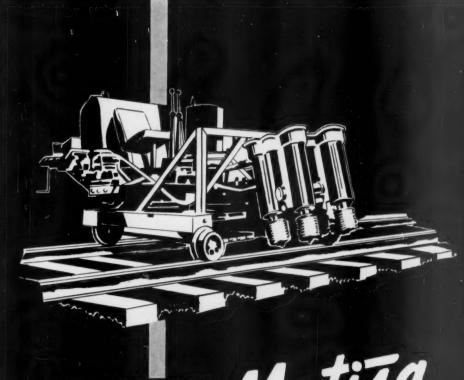


REVENUE TON-MILES decreased fractionally as compared with 1952, with passenger traffic also lower, the year's . . .



NET INCOME, after all charges, is expected to reach the relatively satisfactory level of \$900 million, best since 1942.

All 1953 figures partially estimated.



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"These engines," reports H. S. Graham, traffic manager, "have proved very satisfactory. They are more flexible than the electric units."

His opinion is based on 350,000 miles of travel by the two units during the seven-year period. Their carload movement annually is about 10,000 cars. Freight consists of logs, wine, hops; fresh, dried and canned fruit.

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CATERPILLAR*

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FOR HIGH-PROFIT
PERFORMANCE

What's the Railroads' 1954 Outlook?

Business leaders and economists are in pretty general agreement that there will be some slackening in the pace of business in 1954 — at least in the first few months. If they are right . . .

• The railroads will get less freight to haul. That will mean . . .

 Gross revenues will be under the 1953 total—perhaps by 10 per cent and . . .

• Net earnings will be under 1953 levels, too. But . . .

• The railroads' financial position was never better, and . . .

- Capital expenditures again will exceed \$1 billion annually, with . . .
- Orders for new equipment expected to be over \$500 million, maybe as much as \$600 million.
- Purchases of material and supplies, including fuel, probably will total \$1,725 million, but . . .
- The need for modernization of facilities continues to challenge management, while . . .
- Brotherhood demands for fantastic wage increases are the first big problem to be faced.

The economic behavior of the railroads can be measured in about the same manner as the power of a locomotive. The "tractive force" exerted at the rims of its driving wheels is the product of the interaction of a complex group of factors—none of which is entirely controlling, but no one of

which is unimportant.

The "tractive force" which the railroads will exert upon the economy of
1954 will depend chiefly upon the general level of business activity. Unlike
enterprises whose rate of activity depends, in important measure, upon
changes in inventory, the railroads
have no inventory. Their product is
perishable. Transportation service is
proportionate absolutely with day-today demand.

The General Prospect. The forecasters of general business prospects are split in their predictions, ranging from a dip of 10 per cent to a rise of 5 per cent. Those railroad executives who have attempted to predict their revenues for next year show the same diversity—though most of them see a mild downward trend. If the predicters of a "moderate recession" in general business prove right, the railroads' gross revenue might fall as much as 10 per cent below the \$10.7 billion they are expected to have earned in 1953, (Gross in 1953 was up about 1.6 percent over 1952.)

The railroads' fortunes are linked more closely with the so-called heavy goods lines than with any other activity. The "recessionists" believe the cease-fire in Korea and slackening of demands for military supply or stockpiling may bring declines in heavy goods traffic greater than can be looked for in consumer goods. Too, industries like steel and coal had rel-

atively peaceful labor relations in 1953. If strikes like those in recent previous years were to plague them in 1954, the effect on railroad traffic might be serious.

Offsetting this view is the Department of Commerce prediction that business outlays for new plant and equipment for the first quarter of 1954 at least will run considerably higher than in 1953. The public has more cash saved up than a year ago; wages are higher and employment is still near record peaks.

Competition. Railroad traffic is also influenced by the competition of other carriers. Thus far, the railroads, each year since World War II, have been hauling a progressively smaller share of the total traffic-though they remain the dominant freight carrier. They have either lost existing traffic or failed to share proportionately in newly created traffic. Whether this loss trend will continue in 1954 depends upon whether the railroads can make quickly the changes in service and charges necessary to regain the traffic. Service improvements are definitely under way.

Basic changes in ratemaking, most rai roaders say, require a recasting of the laws governing the railroads or in the concepts of the regulatory bodies.

The relative ability of the railroads to recapture traffic would be affected also by an end to the present government policy which grants public funds and facilities to their competitors. Announcement by a responsible officer under the new Republican administration that adequate user payments for use of public property are a desirable goal may bring a start of remedial action in 1954.

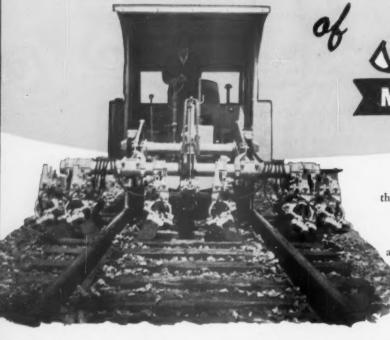
Net Income. How the level of gross revenue will affect the railroads' net income depends upon how well the railroads can continue to exploit the cost-cutting features of the \$9 billion investment in new plant they have made since World War II. In 1953 their operating expenses rose only 0.4 per cent, while their revenues increased 1.6 per cent; they moved more of the increased gross down to net. Rate increases had little effect on this result, because no important general national rate increases became effective during 1953.

Purchases. The railroads' "tractive force" on the economy will depend on how they behave as buyers as much as on what they carry and how much they earn. Their purchases of materials, supplies and fuel should reach about \$1,725,000,000 in 1954, compared with about \$1,890,000,000 this year. Two important items: Present plans call for the renewal of 29.6 million crossties—slightly below 1953; in contrast, the roads expect to lay down about 1,383,000 net tons of new rail in 1954, or 7.7 per cent more than in 1953.

The railroads are expected to increase substantially the already high level of installation of new train and yard radio, telephones, loudspeakers and printing telegraph, and to raise slightly their expenditures for improved signaling and highway crossing protection.

Among the items of advanced technology which may cast shadows in 1954 are high pressure steam-turbine electric locomotives to compete with diesels and the new gas turbines. With the atomic age, development of electric power from nuclear fuel in fixed stations may renew the railroads' interest in large-scale electrification.

THE FACTS WILL SOUNDLY BACK Your 1954 Budget Recommendation



MULTIPLE TAMPERS

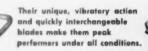
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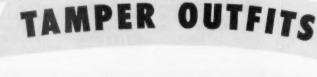
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emergency CTC operations, lighting and
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Pricing Underlies Transport Problem

So says Commerce Department's Dearing, who suggests that rate controls be relaxed and that regulatory policy be otherwise changed to "strengthen... common carrier system..."

The need for rates that will truly reflect the inherent advantages of each major agency of transportation underscores the whole problem of preserving and developing the country's common carrier system, according to Charles L. Dearing, deputy under secretary of commerce for transportation.

He outlined his views in a December 29 address in Washington, D.C., at the annual meeting of the American Economic Association. He also advised that the common-carrier system would be strengthened by enactment by Congress of various other proposals, such as those designed to bring under regulation large areas of exempt transportation, to broaden regulatory controls over retention of operating rights and extension of service, to limit the scope of contract and private carriage, and to increase federal authority over intrastate rates.

Dr. Dearing's address was made at a session on "National Transportation Policy," where another address was delivered by Sidney L. Miller of the University of Pittsburgh. I. L. Sharfman of the University of Michigan presided, while the Dearing and Miller papers were discussed by George P. Baker of Harvard University and Lionel W. Thatcher of the University of Wisconsin. Several members of the audience also participated in the dis-

Guiding Principles—As "guiding principles" on the matter of transport regulation, Dr. Dearing proposed these:

 Regulatory policy should be adapted periodically to the dynamics of our national economy and to changes in transport organization.

(2) Regulatory controls should be uniformly applied and centrally administered.

(3) The objectives of promotional and regulatory programs should be basically consistent in the long run, and "any deviation from this economic principle based on apparent requirements of national security or "infant industry" promotion should be rigidly tested and subjected to periodic review."

(4) Common carriers should be relieved of obligations to provide service in those areas where private operations appear to have distinct advantages of cost, flexibility, and convenience.

(5) The owners of regulated indus-

tries that are required by law to assume the obligations of common carriers should be allowed sufficient managerial discretion to permit prompt adjustment of pricing policies to cost changes and other competitive circumstances.

"Hard Core"—These propositions were framed by Dr. Dearing on the assumption that the country desires to keep the maintenance of common carrier service as the "hard core" of its regulatory policy. As to the first proposition, he found that the nation's

legislative processes "are sufficiently flexible to keep regulation attuned to the realities of our economic development."

He went on, however, to warn that adaptation of regulatory policy to realities is not automatic. "The record," he said, "also indicates that these major adjustments occur only when strong transportation statesmanship is asserted or when general circumstances are such as to solidify and make articulate the demand for correction in the public interest."

Elaborating on his call for uniform application and central administration of regulatory controls, Dr. Dearing asserted that operations of exempt and partially exempt carriers have created competitive conditions which "may tend to leave the common carriers only marginal traffic between the main traffic centers, while at the same time

Traffic

Loading Drop Seen for 1st Quarter

Shipper boards forecast 1.4 per cent decline below last year's first three months

Freight car loadings in the first quarter of 1954 are expected to be 1.4 per cent below those in the same period of 1953, according to estimates of the 13 regional Shippers Advisory Boards.

On the basis of those estimates, loadings of the 32 principal commodity groups will be 6,561,552 cars in the first quarter of 1954, compared with 6,657,179 actual loadings for the same commodities in the corresponding period last year. Three boards estimated an increase and 10 a decrease in loadings for the first quarter compared with the like 1953 period.

The accompanying tabulation shows actual loadings for each district in the first quarter of 1953, the estimated loadings for the first quarter of 1954, and percentage of change.

The boards expect an increase in the loading of 12 and a decrease in 20 of the commodities listed. Among expected increases are: Frozen foods, fruits and vegetables, 14.6 per cent; citrus fruits, 6.8 per cent; salt, 6.1 per cent; all grain, 3.8 per cent; ore and concentrates, 1.6 per cent: paper paper board and prepared roofing, 1.5 per cent; food products in cans and packages, 1.3 per cent; and fresh

SHIPPERS ADVISORY BOARD	ACTUAL LOADINGS FIRST QUARTER, 1953	ESTIMATED LOADING FIRST QUARTER, 1954	S PER CENT
New England Atlantic States Allegheny	129,346 688,808 902,915	125,584 697,772 876,994	2.9 dec 1.3 2.9 dec
Ohio Valley Southeast Great Lakes Central Western	832,999 1,000,490 450,068 238,253	800,330 988,917 444,012 250,351	0.3 dec 1.2 dec 1.4 dec 5.1
Mid-West Northwest Trans-Missouri	797,056	764,165 245,625	4.1 dec 5.3
Kansas Southwest Pacific Coast	332,490 505,733 349,995	317,374 490,621 347,372	4.5 dec 3.0 dec 0.8 dec
Pacific Northwest	225,750 6,657,179	212,435 6,561,552	5.9 dec.

vegetables other than potatoes, 0.9 per cent.

Commodities for which decreases are estimated include: Hay, straw and alfalfa, 21.9 per cent; automobiles and trucks, 16.1 per cent; agricultural implements and vehicles other than automobiles, 9.5 per cent; poultry and dairy products, 9.2 per cent; iron and steel, 6.3 per cent; brick and clay products, 5.3 per cent; machinery and boilers, 4.9 per cent; gravel, sand and stone, 3.7 per cent; cement, 3.2 per cent; metals other than iron and steel, 3.1 per cent; potatoes, 2.9 per cent; and fertilizers, 2.3 per cent.

they must maintain high-cost services between points offering only limited or unbalanced traffic." As to his call for consistency between promotional and regulatory programs, he said that such programs "continue to operate in many areas at cross purposes."

Taxpayer Pays—"In most respects," Dr. Dearing added, "these [federal] aids have been extended without reference to their impact upon the regulated transportation industry, particularly upon the essential common carrier. Under such circumstances, each agency does not have an opportunity to compete for traffic fairly based on economic standards of relative cost and quality of service. The effect is to complicate the administration of regulatory policy, to distort the competitive pattern, and in some degree, to transfer transportation costs from the shipper to the general taxpayer."

Meanwhile, Dr. Dearing noted "encouraging signs" of progress toward an "eventual solution" of the subsidy problem. He mentioned the undertaking to break down payments to the air lines to show subsidies and mail pay separately, and road tests being conducted under auspices of the Highway Research Board.

"Federal financing of river and harbor improvements constitutes the one area in which no real progress has been made toward the elimination of the distorting competitive impact of preferential subsidy treatment." Dr. Dearing added.

Relief from Losing Services-One possible solution of this problem would be to confer on the Interstate Commerce Commission authority to overrule state orders that prevent discontinuance of unprofitable train services, Dr. Dearing suggested. In any event, he thinks common carriers should be relieved of responsibility to provide services "where it is clear that private transportation, or other forms of forhire transport, are less costly, more flexible, or better adapted to the convenience of the users." And he went on to say that the desirability of thus relieving common carriers "is notably evident in the case of railroad branch line operations.

In his discussion of common-carrier pricing, Dr. Dearing addressed himself first to proposals to enact legislation like that embodied in the pending time-lag bill. This bill (S.1461) is designed to insure prompt rate increases as costs rise. His advocacy of

such legislation was expressed this way:

"Failure to adjust carriers' revenues and earnings to increased postwar costs has caused substantial financial loss to the carriers and in the long run would result in less economical service to the public. However, review of later general increase proceedings before the L.C.C. indicates substantial improvement in procedural techniques. Nevertheless, there appears to be a need for establishing by legislative direction a standard of administrative action in general revenue cases in order to assure that the issues involved will be dealt with promptly."

New Rate Rule As Expediter—From this, however, Dr. Dearing went on to suggest that the need for time-lag legislation would be lessened if the Interstate Commerce Act's rule of rate-making were revised to eliminate the requirement that the commission consider "the effect of rates on the movement of traffic." "Such a change," he added, "would return to the carriers a large area of managerial discretion and responsibility in rate-making and eliminate the need for the commission to hear and consider voluminous testimony and exhibits bearing on the relationship of proposed general increases to general economic factors."

LIGHT AIDS TICKET SALES

NEW TICKET OFFICE COUNTER at the Cleveland Union Terminal, Cleveland, Ohio. There are two 40-watt fluorescent lamps in each of the fixtures in the canopy, the fixtures being covered with small eggerate louvers. The 13-block panel board at the upper rear indicates types of space available for each train using the terminal.





TRAIN INFORMATION REQUESTS and ticket reservations are handled in this area directly behind the ticket sales counter. Continuous rows of two, 72-in. fluorescent lamp fixtures, with opening in top, produce 50 footcandles on the working surfaces. The installation has been in service approximately six months.

Next came Dr. Dearing's appraisal of the pricing factor as the one which underscores the whole transport problem. He would not go as far as the British government has in giving its nationalized railroads "almost complete freedom in rate negotiations with shippers"; but he indicated agreement with the "many students of rate problems" who "believe that opportunities exist for adjusting the common-carrier pricing mechanism to competitive and economic realities." To point up what he had in mind, Dr. Dearing continued as follows:

"The partial failure to reflect properly railroad cost characteristics in the railroad rate structure and the I.C.C.'s growing practice of basing railroad rates on average costs has resulted in substantial loss of profitable traffic. Thus serious attention is being given to proposals to foster differential pricing for rail transportation in contrast to motor truck transportation because of the wide difference in their relative ratio of fixed to variable costs.

"Acceptance of this rate theory for

"Acceptance of this rate theory for railroad rate-making would permit the railroads to depart from standard rates whenever actual costs of specific movements varied from the average cost. It would enable the recapture of certain traffic which has been diverted to higher cost transport agencies because the railroad rates were predicated on average costs higher than the lower actual costs of headling such tests."

of handling such traffic."

Costs Little Used—Among those discussing the Dearing paper was Dr. Ford K. Edwards, director of the National Coal Association's Bureau of Coal Economics and former director of the I.C.C.'s Bureau of Accounts and Cost Finding. Dr. Edwards recently made an analysis of railroad cost and rate data which show that "practically nothing" now moves at costs as set out in the formula issued by the commission's bureau. Value of service, which he regarded as another way of saying "the effect of the rates on the movement of traffic," is the major ratemaking factor, according to Dr. Edwards.

His analysis was embodied in a verified statement which he filed with the commission in the pending mailpay case (No. 9200). Despite its showing that "practically nothing" moves at cost, Dr. Edwards told the A.E.A. meeting that cost data are "usable, if only to show how far the carriers get away from costs."

Meanwhile, Dr. Miller had delivered his address, which advocated elimination or drastic reduction of all subsidies in the transport field. Dealing with domestic air transport, where the subsidy arrangements are "without parallel, except perhaps in the case of ocean shipping," he asserted that the air lines should be made to stand on their own feet "within the near future."

No Basis for Civil Aviation Aids
—If some fostering of civilian aviation
is desirable for national defense, Dr.
Miller would have the cost of such
fostering included in the defense budget. He found no basis for further aid
to civil aviation, since there are in this

country no areas in which development would be speeded by the granting of such aid.

Dr. Miller's appraisal of the present situation is that domestic air transportation is "far from self-sufficiency," and one must be "optimistic" to foresee self-sufficiency—"especially if the Civil Aeronautics Board continues to issue certificates as it has in the past."

As to highways, Dr. Miller found no basis for federal promotional activities in that field, and no sound basis for continued heavy federal expenditures on roads. Trimming the outlay, he said, "is both sound in principle and fiscally desirable."

Likewise, he found no justification for the federal waterway program. Here he did not advocate closing facilities already in operation, or halting work on uncompleted projects. He did advise, however, that all future projects be built and operated on a self-liquidating basis.

Dr. Miller would impose user charges on all federally-provided facilities in the transport field. Such charges should cover maintenance and operating costs, "as a minimum," he said.

He would separate regulatory and promotional activities of the federal government, lodging all regulatory functions in a single agency independent of the executive department. He would also unify all promotional activities, preferably in a separate executive department. If that idea were rejected, the Department of Commerce would be a logical place to put the

At the same time, he warned that there would be a "significant gap" if the Army's Corps of Engineers were left with its present functions with respect to inland waterways. The corps, which has "so often been wrong," would still be free to recommend programs to Congress, Dr. Miller pointed

promotional activities, Dr. Miller sug-

Order to Refit Losing Passenger Train Upheld

The courts have upheld an order of the Public Utilities Commission of California which denied a Southern Pacific petition for authority to discontinue an unprofitable passenger train and directed the road to reequip the train with self-propelled cars.

The Supreme Court of the United States on January 4 dismissed the SP appeal—for want of a substantial federal question. The dismissal has the effect of leaving in force a decision of the Supreme Court of California which upheld the commission.

The case was docketed in the U. S. Supreme Court as No. 486, Southern Pacific vs. Public Utilities Commission of California. The SP train involved makes a mid-day run between Oakland Pier and Sacramento. The SP's petition for authority to discontinue it was based on evidence indicating that the

out-of-pocket loss from its operation in 1950 was \$100,000—one third of that year's out-of-pocket loss of \$300,000 on the SP's entire passenger service between Oakland-San Francisco and Sacramento.

Figures of the Week

38 Million Cars Loaded In 1953: 0.8% Above '52

Loading of revenue freight on Class I railroads totaled 38,302,762 cars in 1953, according to the Association of American Railroads. This was an increase of 317,607 cars, or 0.8 per cent, compared with 1952.

The 1953 and 1952 loadings by commodities are compared in the following

Luine :	1953	1952	Per cent
Grain and grain products	2,458,089	2,565,024	4.2 Dec.
Livestock	451,702	491,686	8.1 Dec.
Coal		6,717,250	5.0 Dec.
Coke	693,299	673,112	3.0 Inc.
Forest Products	2,259,852	2,270,195	0.5 Dec.
Ore	3,145,508	2,653,267	18.6 Inc.
L.C.L	3,503,752	3,690,853	5.1 Dec.
Miscellaneous	19,407,074	18,923,768	2.6 Inc.
Total	38,302,762	37,985,155	0.8 Inc.

Loadings of revenue freight for the week ended December 19 totaled 618,432 cars; the summary for that week, compiled by the Car Service Division of the Association of American Railroads, follows:

TOTAL TOTAL ST			
REVENUE FI For the week et District Eastern			
Total Western Districts	232,212	255,267	246,921
Total All Roads	618,432	710,390	671,362
Commodities: Grain and grain products Livestock Coal Coke Forest products Ors Merchandise I.c.I. Miscellaneous	38,876 7,860 117,645 10,903 39,401 18,186 60,624 324,937	44,625 8,400 141,792 15,201 47,110 20,517 68,316 364,429	44,319 8,554 149,781 16,695 40,691 14,681 64,592 332,049
December 19 December 12 December 5 November 28 November 21	618,432 651,951 662,035 596,230 725,732	710,390 721,342 719,324 670,371 811,073	671,362 753,194 773,530 821,776 711,447
	-	-	-

Cumulative total 51 weeks ...37,821,784 37,464,455 39,997,174

In Canada.—Carloadings for the seven-day period ended December 14 totaled 71,787 cars, compared with 74,502 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

		Cars Loaded	Rec'd from Connections
Totals for Canada: December 14, 1953 December 14, 1952		71,787 78,862	27,994 30,618
Cumulative Totals December 14, 1953 December 14, 1952	**	3,840,233 3,989,490	1,555,088 1,658,602

Community Relations Expanded

Success of "pilot" projects leads Eastern railroads to form community committees in five additional cities

A program of community relations, launched experimentally by the Eastern Railroad Presidents Conference last fall, is being expanded; railroad community committees, designed to improve the industry's public relations at the grass roots level, will be formed in Toledo, Ohio; Fort Wayne, Ind.; Albany, N. Y., and Rochester, and Allentown, Pa., during the early part of this year.

David I. Mackie, chairman of the E.R.P.C., said success of four "pilot" operations in community relations at Columbus, Indianapolis, Buffalo and Boston over the past four months has prompted immediate expansion into five new territories, with additional communities slated for inclusion later in the year. Mr. Mackie said the object is "to form among local railroad people an organization to represent the industry in community affairs." turn, he added, "the railroads hope to emphasize to citizens of these communities their stake in the railroads and to acquaint them with the railroads' prospects, problems and overall state of health." He emphasized that community committee activities would supplement programs already being carried on by individual railroads.

Speakers' Bureaus-Eastern roads launched the community committee activity on an experimental basis last fall. Preliminary meetings of key railroad officers were held in the four "pilot" towns. Prospective members were nominated by these organizing groups and permanent committees were formed around the first of September.

As its first project, each committee formed a speakers' bureau and laid plans for training from 20 to 25 railroaders. Arrangements were made with a university in each city to conduct a course consisting of 12 three-hour sessions. The purpose of these courses was threefold:

(1) To give these railroad people authentic information regarding the railroad situation and the railroad industry's problems;

(2) To give them an understanding

UNDER THE WATCHFUL EYE of F. G. Gurley (left), president of the Santa Fe, N. C. Dezendorf, vice-president of General Motors and general manager of the Electro-Motive Division, places a plaque on a 16-cylinder, 1,500-hp. diesel engine rep-resenting the 25,000,000th horse-power built by E.-M.D. since the 567-series GM engine was introduced in 1938. The engine will go into one of four F-7-type freight units of a loco-motive for the Santa Fe.

For the statistically-minded, Mr. Dezendorf came up with this one: 'If 25,000,000 horsepower were built into one diesel locomotive, it could pull a train of 3,963,204 box cars, each 42 feet long and weighing 40 tons, at 10 miles per hour on level track. Such a train would be 31,525 miles long—more than one and one-fifth times around the world." Mr. Gurley, whose railroad operates 2,-338,010 diesel horsepower, did not dispute the statement.

of the importance of community relations activity and how effective public speaking by railroad people can serve to improve public appreciation of the railroad industry; and

(3) To improve their public speaking techniques.

These courses got under way during September. A total of 32 railroad officers from about a dozen railroads appeared as guest speakers before the four groups.

Speaker bureau members have already appeared on scores of local platforms. From 10 to 20 speeches a month are being scheduled by each of these

groups.

Other Projects-Meanwhile, the committees themselves have begun to initiate additional projects. Two par-ticipated in annual Community Chest or United Appeal drives. Two others cooperated in Chamber of Commercesponsored Business-Industry-Education days. All have organized subcommittees looking toward close cooperation with business, agriculture and civic organizations. Publicity committees have been formed to generate news at the local level. Additional projects being considered for the future include tours of railroad facilities for school and business groups; cooperating in youth programs; and arranging distribution of appropriate railroad films and other railroad information material to local groups and organiza-

The railroad group in the Buffalo area is called the Niagara Frontier Railroads' Committee on Community Relations. Norman M. Lawrence, assistant to vice-president, Pennsylvania. is chairman. In Indianapolis, the group is called the Railroad Community Committee of Indianapolis. Chairman is William H. McKitrick, superintendent, Indianapolis Union. In Columbus, the chairman of the Railroad Community Committee is J. W. Crowley, division superintendent, New York Central. In Boston, the Railroad Community Committee of Greater Boston has Clifford A. Somerville, general representative of the Boston & Maine, as chairman.

Lackawanna to Establish Company Magazine

The Lackawanna will establish, early this year, a company magazine, to be published monthly under the auspices of the railroad's public relations department.

George W. Eastland. editor of the Chicago & North Western Newsliner, has been appointed editor of the new Lackawanna magazine, effective imme-

The magazine will combine features of interest to employees and their families, concerning the company and its services and facilities, its policies and its aims and purposes, in the interest of mutual understanding between management and personnel. The magazine also will aim to stimulate the interest of patrons and to establish bonds of friendship between the Lackawanna and its communities. It is expected that the first issue will be distributed next May.

TP&W Receives "Plant America" Award

The Toledo, Peoria & Western's office building at Peoria, Ill., has received another award. This time it's a "Plant America" award—one of a number granted to industrial concerns "in recognition of achievement in industrial landscaping and beautification contributing to employee and civic pride in our American heritage."

Among other winners were the Armco



THE AMERICAN CAR & FOUNDRY Co.'s plant at Berwick, Pa., also won one of the "Plant America" awards from the American Association of Nurserymen.

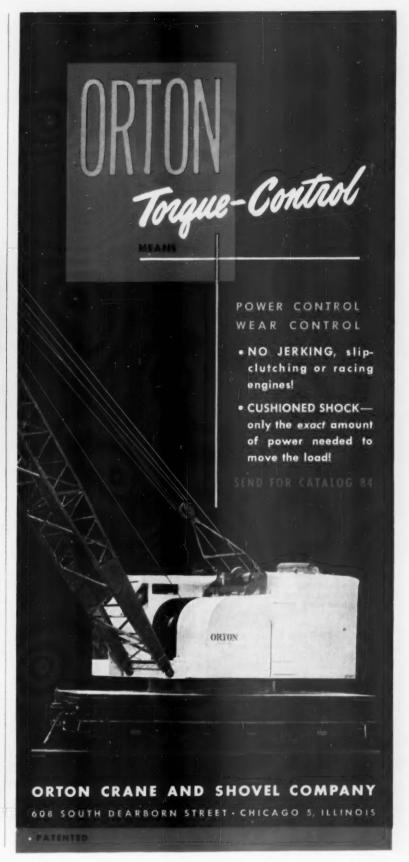
Steel Corporation, Middletown, Ohio; the Frank G. Hough Company, Libertyville, Ill.; the American Car & Foundry Co. (Berwick, Pa., plan:); and the Eastman Kodak Company, Rochester. N.Y.

The awards jury was headed by Charles F. Kettering. Awards will be presented to winning companies at annual banquets of state associations of nurserymen during the early part of 1954.

Operations

CPR, CNR, Expand "Piggyback" Service

The Canadian Pacific and the Canadian National have extended their "trailers on flats" freight service to include the handling of truckload consignments between Montreal and Toronto. The two railways had previ-





Kinnear Metal Rolling Doors

Offer Time-Tested Advantages

For All Railway Buildings

More than 50 years of timetested advantages explain why Kinnear Rolling Doors are used in so many railway buildings of all types.

The doors rise straight upward into a small coil above the lintel. There's no loss of floor and wall space around doorways. Even ceiling space remains clear at all times, permitting unhampered use of overhead hoists, cranes, conveyors and similar equipment. You get more usable square-footage out of your buildings.

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Motor Operator. Push-button switches may be used at any number of convenient points.

ously handled some less-than-truckload shipments in this trailer-truck service.

In the new loading arrangements, freight in lots of 6,000 lb. or more will be handled in railway-operated trailers which will be carried on spe-cially equipped railway freight cars in fast freight-train service between the two cities. Freight will be loaded at shippers' places of business directly onto the railway-operated trailers on one day, and delivered at consignees' plants in the same trailers the next

The two railways introduced trailerson-flats service for transportation of l.c.l. shipments between Montreal and Toronto 13 months ago.

Electrics Out at Detroit

Electric locomotives which have hauled freight and passenger trains between Detroit, Mich., and Windsor, Ont., through the Michigan Central's river tunnels for almost 44 years have been retired, and through operation by diesel power was made 100 per cent effective in the tunnel and accessory yards, as of 8 a.m. December 29.

Made possible by installation of a ventilating system sufficiently powerful to clear diesel exhaust from the 8,368ft., two-tube subaqueous tunnel, the cessation of straight electric propulsion brings to an end one of the early trunk-line electrification projects designed to provide power in physical circumstances where steam operation is undesirable. Through operation of diesel power will eliminate the previous necessity of changing power at Windsor. Detroit is a division point.

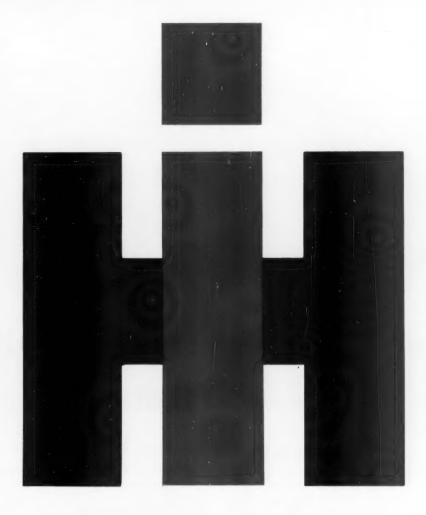
The original 100- and 120-ton electric locomotives put in service in 1910 have since been supplemented by modified locomotives transferred from the Electric division of the New York Central at New York and from the Cleveland Union Terminal (on which the last straight electric ran last November). Length of the electrified section was about 4.5 miles, with about 28 miles of track equipped with third rail (or overhead steel contacts at interlockings).

Operating Rules Order **Expired December 31**

I.C.C. Service Order No. 866, which prescribed operating rules for movement of freight cars, expired Decem-

It was in response to a suggestion from President William T. Faricy of the Association of American Railroads that the commission let the order expire. Mr. Faricy cited improved carsupply conditions and suggested there was no emergency to warrant continuance of the order. He also noted that the companion order, No. 865 (which was the penalty-demurrage order applicable against shippers), had been (Continued on page 212)

18



International Harvester and INTERNATIONAL Industrial Distributors present a complete line of modern earthmoving equipment, led by the INTERNATIONAL two-wheel, rubber-tired tractors with scrapers, and by "Big Red," the INTERNATIONAL TD-24, world's most powerful crawler

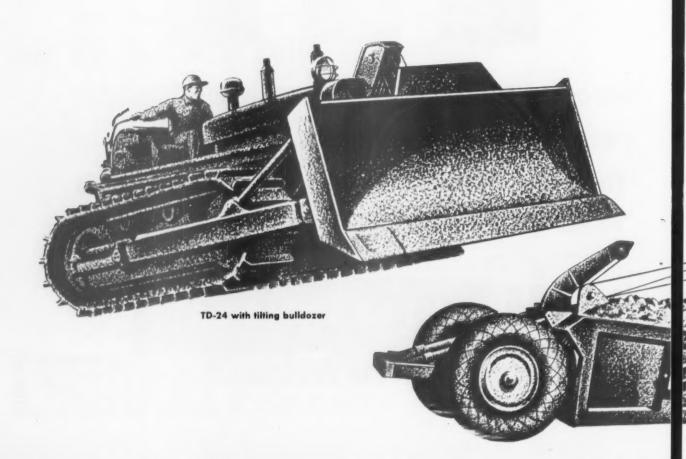


INTERNATIONAL

POWER TO MOVE THE EARTH



Now a complete earthmoving line that comes in the





Big Red Package

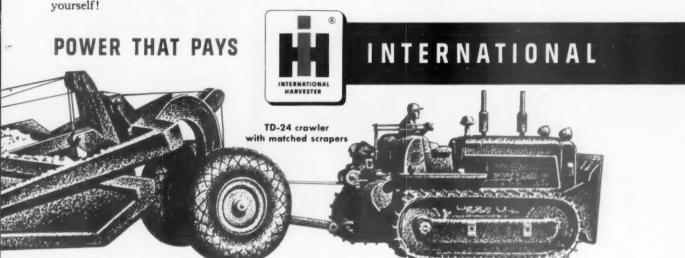
Got a big job to do? Call on INTERNATIONAL'S new Big Red Team!

- Seven rugged crawlers headed by the TD-24—most powerful crawler on the market!
- Twenty-two matching hydraulic and cablecontrolled bulldozers and bullgraders, with land-clearing blades available!
- Four 4-wheeled scrapers!

- Two high-speed, two-wheel, rubber-tired tractors with scrapers (13 and 18 heapedyard capacity)!
- A high-speed, two-wheel, rubber-tired tractor with bottom dump wagon (20 heaped-yard capacity)!

These great machines, now grouped under the INTERNATIONAL banner, have proved their dependability and economy to contractors for years on big projects around the world.

Your INTERNATIONAL Industrial Distributor has the equipment that will help you make a profit on any job you tackle. Call him for full details . . . or for actual demonstrations. See for yourself!



Now All in One Family

the hardest-working work teams in the world!

The new INTERNATIONAL team stars not only a full line of rugged red INTERNATIONAL crawlers, complete with INTERNATIONAL scrapers and bulldozers, but also high-speed INTERNATIONAL two-wheel, rubber-tired tractors with scrapers.

This means that now, more than ever, your INTERNATIONAL Industrial Distributor is

"Earthmoving Headquarters" for your area. He offers you IH equipment to tackle any job, backed up by unsurpassed service facilities and parts supplies.

He's at your call, always, to help keep your equipment rolling...to cut down your downtime and pile up your profit-time...to serve you with INTERNATIONAL "Power that Pays!"

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INTERNATIONAL

POWER THAT PAYS



TD-24 crawler with matched scrapers



TD-18A crawler with matched scrapers



TD-24 crawler with bullgrader



TD-14A crawler with cable bullgrader



TD-9 crawler with hydraulic bulldozer



T-9 crawler with hydraulic bullgrader



TD-6 crawler with hydraulic bulldozer



T-6 crawler with hydraulic bullgrader



Model 27-75 two-wheel, rubber-tired tractor with 18 heaped-yard capacity scraper



Model 2T-75 two-wheel, rubber-tired tractor with 20 heaped-yard capacity bottom dump wagon



Model 27-55 two-wheel, rubber-tired tractor with 13 heaped-yard capacity scraper

Faster freight...safer freight



ON HYATT ROLLER BEARINGS



Here it comes! The semaphore flashes green . . . a fast freight rushes over the rails . . . and another colorful diesel reminds us that the railroads are rapidly modernizing. Actually, many railroads are already completely dieselized, and they're now investing many more millions in push-button freight yards, electronic signaling systems and automatic safety devices. But the biggest news in modernization is Hyatt Roller Bearings for freight cars! Standard for years on railroad passenger cars, roller bearings are the answer to a brighter future for freightbecause they eliminate the hot box problem, greatest single cause of costly freight train delays. When all freight cars are Hyatt-equipped, they'll roll with greater speed, greater smoothness, greater economy and greater safety! Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.



running mate of diesel freight!

ROLLER BEARING
JOURNAL BOXES



ILLINOIS CENTRAL RAILROAD. Close-up of the tracer actuated profiling tool cutting new contour on a wheel on the NILES 52" car wheel lathe in the IC's Burnside Shops (Chicago). Note the depth of cut, 24 tapes.

UNION PACIFIC RAILROAD. When this Niles Wheel lathe tungsten-carbide tipped tools and profiling attachment was installed in the UP's Los Angeles Shop, wheel re-turning time was cut to about 20 minutes.

NILES LATHE

In these outstanding wheel shops, Niles 52" hydraulic car wheel lathe can turn set in less than 20 minutes

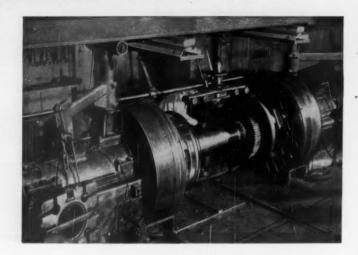
"From floor-to-floor in less than twenty minutes, compared with old, slow lathe's hour and 20 minutes!" is a typical report from these users of the Niles 52" hydraulic car wheel lathe with profiling attachment.

Designed for heaviest duty with a wide range of spindle speeds up to 25 rpm, this lathe can be used with either tungsten carbide or high speed steel tools.

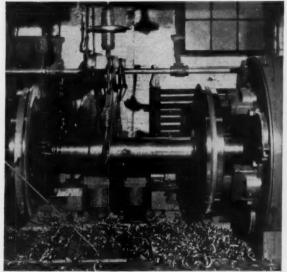
Extra Wheel Mileage

By switching to cutting with carbides, these shops are also getting thousands of extra miles of wear from many wheel sets. That is due to the carbide tool's slicing right through spots of excessive hardness, while the high speed steel tool must cut below the spot into softer metal, taking off more surface than required by the depth of the concavity.

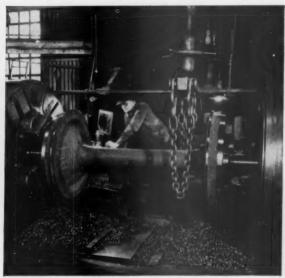
If your wheel shops are still returning wheels the slow, old-fashioned way, consider carefully how much a modern Niles wheel lathe will save you in manhours, wheel inventory and replacement of wheels.



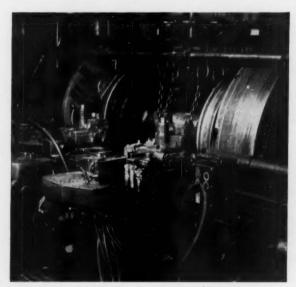
RE-TURNS WHEELS UP TO 300% FASTER



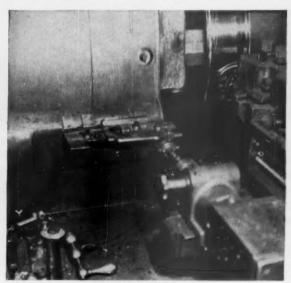
MISSOURI PACIFIC RAILROAD. Wheel set in NILES 52" car wheel lathe being profiled. (In Missouri Pacific's North Little Rock Shop.)



THE PENNSYLVANIA RAILROAD. Above photo was taken from the rear of the NILES 52" car wheel lathe in the PRR's Altoona Shops. Flanging and profiling tools are at work.



SOUTHERN RAILWAY. Profiling and flanging tools at work on both wheels of a set on the NILES 52" car wheel lathe at the Southern's Chattanooga Shops.



NORFOLK & WESTERN RAILWAY. Close-up view of the cutting of new profile with the NILES 52" hydraulic car wheel lathe in the N&W's Roanoke Shops. Note tracer tip "climbing" the crest of the profile template.

Write: To find how you can cut *your* wheel shop costs with the Niles 52" hydraulic car wheel lathe and other outstanding Niles machine tools, write now to Hamilton Division, Baldwin-Lima-Hamilton Corporation, Hamilton, Ohio.

BALDWIN-LIMA-HAMILTON

Hamilton Division . Hamilton, Ohio





STARTING BATTERIES FOR DIESEL ELECTRIC LOCOMOTIVES

QUICK BREAKAWAY and fast acceleration of

HIGH POWER RESERVE at all times for positive operation of control equipment.

HIGH AVAILABILITY—uninterrupted on-line

EASY to change and keep charged.

CLEAN, quiet, vibrationless operation.





AMPLE POWER for entire car-lighting and airconditioning loads . . . uniform voltage at proper

STEADY LIGHTS AND COOL CARS even during

UNINTERRUPTED SERVICE—trouble-free performance—withstand vibration, shock, service variations and temperature differences.

MEET ALL REQUIREMENTS of car design and electrical loads. Easily changed or recharged in yard. Safe, clean, quiet.



Exide is your best battery buy... AT ANY PRICE

FOR ALL STORAGE BATTERY JOBS IN ALL RAILWAY APPLICATIONS

Exide Batteries for Railway Service meet the most exacting requirements. Each is designed for a specific job. Each assures dependable performance in its particular application — diesel starting, car-lighting,

air-conditioning, signaling, electric communications, materials handling, trucks and buses. Wherever used, you can count on Exide for extra long battery life, with inherent safety and low over-all costs.



BATTERIES FOR MATERIALS-HANDLING TRUCKS

INSTANT SURGE OF POWER, plus finger-tip control, split-second handling, easy maneuvering,

ROUND-THE-CLOCK PERFORMANCE—no mechanical troubles, no unscheduled down time.

UNIFORM SPEED straight through to end of shift. SIZES for all types and makes of battery-electric

trucks-hand and rider.





BATTERIES FOR SIGNALS, SWITCHES, COMMUNICATIONS

INSTANTANEOUS POWER for bright, steady signal lights . . . dependable operation of switches, relays, locks, indicators and allied apparatus.

AMPLE RESERVE for any emergency conditions

POSITIVE OPERATION. Power is delivered at needed rates, providing steady performance with high sustained voltage.

HIGH CAPACITY in compact space.





6,000 passenger cars have been built

THE "NEW LOOK" IN PASSENGER COACHES IN 1934

Fresh from the Worcester shops of Pullman Standard Car Mfg. Co., this coach is the first of 50 streamlined passenger cars built for the New York, New Haven and Hartford Railroad Company over 19 years ago. Describing this equipment, RAILWAY AGE in its Jan. 5, 1935 issue says, "Built to provide the maximum in comfort with an improved appearance, it represents a pleasing transition from the conventional in railroad passenger equipment to the more tional in railroad passenger equipment to the more radical designs which the future may bring."



STILL "NEW LOOKING" AFTER 19 YEARS OF SERVICE

From its appearance today it is hard to realize that this New Haven car, like the others built in 1934, has been in operation for almost two decades. Its present excellent condition is primarily due to for-ward-looking engineering both in design and con-struction and to the choice of materials well able to meet service requirements. Still thoroughly modern, it shows both inside and out the remarkable ability of lightweight Cor-Ten steel equipment to stay in revenue-producing service year after year.



better with USS COR-TEN steel since 1933

The New Haven's first streamlined coaches

in service since 1934 prove the durability of lightweight construction with USS COR-TEN High Strength Steel

Passengers on the New Haven opened their eyes in amazement when they stepped into these cars almost twenty years ago. For here was something entirely new and different in coach service. Sleek streamlined exteriors. Attractively decorated interiors. Improved lighting. Extra wide windows. Air conditioning. Individual seating. Here for the first time was superior traveling comfort at coach fare rates.

And for the railroad company, here were 50 cars weighing only 107,500 lbs. each—38,500 lbs. less per car than conventional equipment would have weighed. In addition, these cars were able to carry as many passengers as 50 old-style cars with no more power than was required to haul 37 conventional units.

The original 50 New Haven streamlined coaches were quickly followed by 100 more. By 1938, 205 units of like design and construction had been put into service. After the war, the New Haven ordered additional cars includ-

ing diners, grill and parlor-observation cars so that today they have 385 of these Cor-Ten-built units in service.

All of this equipment has been periodically shopped on a four-year basis. And speaking particularly of the cars built up to 1938, the New Haven's General Mechanical Superintendent says, "A close inspection has been made of the Cor-Ten steel construction and—aside from defects which can be attributed to wear and tear—we have found the material to be in satisfactory condition. Cor-Ten steel in general has given very good service."

What is especially significant in this report is the fact that in these cars, which are up to 26.3% lighter than conventional design, body weight has been reduced from 54,700 lbs. to 29,600 lbs. by using USS Cor-Ten steel in one-half the thicknesses required by conventional material.

USS COR-TEN steel is now used in more than 6000 cars to reduce weight and ensure safety, durability and operating economies

The universally good performance of USS COR-TEN steel in early applications like the New Haven cars is only one reason why this superior structural steel is so widely used today in equipment that ranks as the most modern, efficient and also as the most profitable to operate. For not only does USS COR-TEN steel provide high strength and superior resistance to atmospheric corrosion but it lends itself readily to advanced fabrica-

tion techniques. In addition the cost of USS COR-TEN steel is comparatively low.

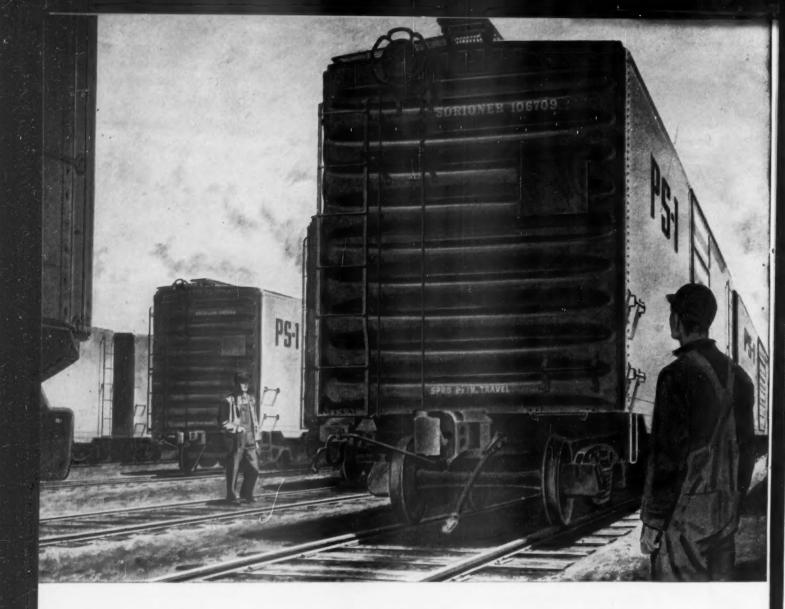
Over twenty years' experience in helping car builders and railways apply USS COR-TEN steel in passenger car units of every type, as well as in more than 180,000 freight cars of all kinds, has given us a background of practical knowledge which is freely placed at your disposal.

UNITED STATES STEEL CORPORATION, PITTSBURGH - AMERICAN STEEL & WIRE DIVISION, CLEVELAND - COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
MATIONAL TUBE DIVISION, PITTSBURGH - TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. - UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

3-2413



UNITED STATES STEEL



THE PS-1 BOX CAR

① The PS-1 is a good example of the progressing standard which is so important in the successful operation of these cars. Pullman-Standard Research and Development engineers have never stopped testing, proving and improving the standardized PS-1.

They continue to anticipate the railroads' needs for better, more economical freight cars. Under laboratory control, Research and Development technicians reproduce service hazards. The cars are subject to conditions more severe than those actually ever encountered.

NEW BOOKLETS

Anyone concerned with Box Cars, Covered Hopper Cars or Hopper Cars will be interested in the facts, specifications and details contained in these illustrated booklets. Write for a copy of any one, or all three.



wow 3) standardized freight cars

The PS-1 Box Car, the PS-2 Covered Hopper Car and the PS-3 Hopper Car—the results of tested design and continuous production, are standardized in order to produce top-quality freight cars more economically for the railroads.

Their designs are the products of Pullman-Standard's Research and Development engineers—engineers with the experience and resources to not only create but also to test the components and completed cars. Their construction reflects the advantages of continuous production. It makes possible the economies of specialized tools and techniques. Their stamina and continual improvement are influenced by "on-line" checking by Pullman-Standard Sales and Service engineers.

50,000 PS-1's have gone into service for 56 railroads proving that standardized cars are a sound, revenue-building investment.

YOUR NEEDS CREATE THE PULLMAN "STANDARD"

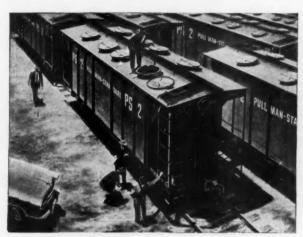
PULLMAN-STANDARD

CAR MANUFACTURING COMPANY

SUBSIDIARY OF PULLMAN INCORPORATED

79 EAST ADAMS STREET, CHICAGO 3, ILLINOIS

BIRMINGHAM. PITTSBURGH, NEW YORK, SAN FRANCISCO. WASHINGTON

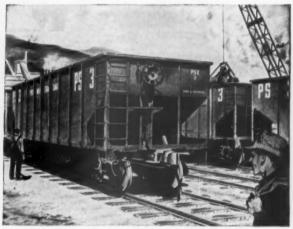


THE PS-2 COVERED HOPPER CAR

The PS-2 Covered Hopper Car presents another Pullman-Standard achievement in freight-car standardization for dependability and economy.

The design is new. It permits the use of the most modern methods of car construction and production including the extensive use of automatic arc welding.

Besides stronger construction, some of the PS-2's features include: improved circular hatches; smooth self-cleaning hoppers; and a sturdier, safer roof.

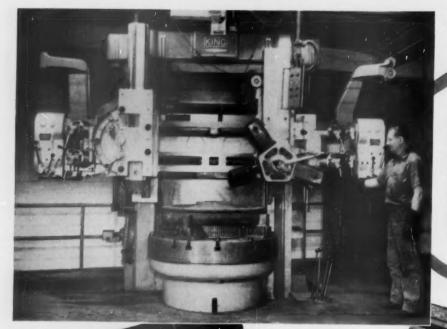


THE PS-3 HOPPER CAR

3 The specifications of the PS-3 resulted from a thorough inspection of virtually every type of Hopper Car in service and from a study of the effects, on the cars, of current handling practices.

The cars were developed to incorporate proven advantages and to omit potential trouble spots.

Among the objectives set for these cars were three which dictated welded construction; maximum strength at all vital points, maximum corrosion resistance, and smooth interiors for fast unloading.



DIESEL LOCOMOTIVE WHEELS ...

The KING Vertical Boring & Turning Machine at left—a modification of our standard 52" design—is used for ber-52" design—is used for bering, facing, and turning operations on Diesel locometive
wheels. Operations performed
include trueing outside diameter, facing off hub, turning
hub for dust guard, rough
and finish boring, cutting the chamfer, and forming radius.

KING

MACHINES ARE MADE IN

10 SIZES

30" to 144"

WIDE VARIETY OF HEAD COMBINA TIONS

EXHAUST PIPE PACKING RINGS . .

MULTIPLE BEARING CROSSHEAD . . Above is a close-up view of a 42" KING in a back shop of a prominent Eastern one of many important maintenance on this versatile machine.

WERTICAL BORING & TURNING MACHINES

YOUR MAINTENANCE REQUIREMENTS— WERTICAL BORING ### TURNING MACHINES

Deliver Maximum Production at Lowest Cost

The modern KING® line of vertical boring and turning machines meets all railroad requirements, large and small—for special purpose work such as Diesel locomotive wheel production—for general purpose work machining a wide range of railroad maintenance jobs.

From the 30" to the 144" size, each of these new KINGS is extremely versatile in its own capacity range. Each model has extra-heavy, rigid construction; smooth power; wide range of speeds and feeds; time-saving ease of control—essentials for fast, precision work.

To speed your maintenance schedules and get the highest availability from your locomotives, put new KING Mills to work in your shops. You'll get rapid production, coupled with dependable accuracy, on your railroad maintenance jobs. Investigate these "top profit" machine tools for your modernized maintenance program.

AMERICAN STEEL

KING MACHINE TOOL DIVISION

CINCINNATI 29, OHIO

Protection

for cars and lading





ENDURANCE

CAPACITY

STURDINESS

CARDWELL FRICTION BOLSTER SPRINGS

Short or Long Travel



Cardwell Westinghouse Co., Chicago Canadian Cardwell Co., Ltd., Montreal



UV 2 BUILT WITH EXPERIENCE-PROVED BY TIME

Our spacious and versatile Mt. Vernon plant remains ready to serve America's Railroads again in 1954. Vast experience, progressive thinking and excellent production facilities assure cars of the finest quality.







WHY 2 PROVEN

One thousand P.S.C. Standard Payloader Hopper Cars were delivered to the C. & E. I. George E. Bennett, Superintendent of Motive Power, C. & E. I. Railroad says: "... A shaker is used to unload the coal into barges, which we consider a very severe service, and to date we have noted no deterioration or mechanical defects in the cars from this type of service." This was after the cars had been in use for MORE THAN ONE YEAR!

WHY 2 SPECIALIZED MANUFACTURING TECHNIQUES

This automatic submerged arc welder, shown in the process of welding the Zee bar center sill, produces a continuous, smooth, even weld obtaining maximum penetration. This is typical of the quality equipment used in our Mt. Vernon plant.

WHY 2 ECONOMY

The P.S.C. Standard "Economy" Box Car offers the long-range economy that comes with improved design and quality workmanship. Write for additional information regarding the P.S.C. Program of Standard Freight Cars.

MT. VERNON CAR

FLAT CARS + BOX CARS HOPPER CARS + GONDOLA CARS CAR PARTS



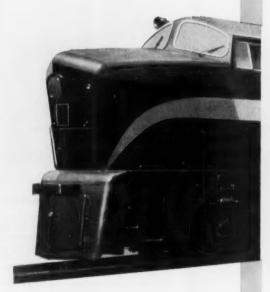
PRODUCTS TO SERVE INDUSTRY ... FARM. AND MOME. Hydroglic Pumping Units - Practician Deep Well Plunger Pumps - Steel Socker Bads - Fingine Lathus - Aircreft Landing Geer Shoot Struct - Precision Rose Geer Machanisms - Dairy Cans and Equipment - Waste Baceptactes - Permanent Caskware - Form Holding Tanks Strange Hoppers - Alley Steel Cantiniens - Oil Strange Hoppers - Endering and Softening Tanks - Agistacts - Steel Strucks - Dust Callectes - Cool and Ash Hoppers - Lack Nuts and Suchings - Couplings and Cannacters - Filiage and Electrical Accessed - Units and Hoppers - Lack Homes - Expect Only ... Locardives and Factors - Airs - Airs

PRESSED STEEL CAR CO. INC.

Thrifty Baldwins consume up to 33 1/3 % less lube oil

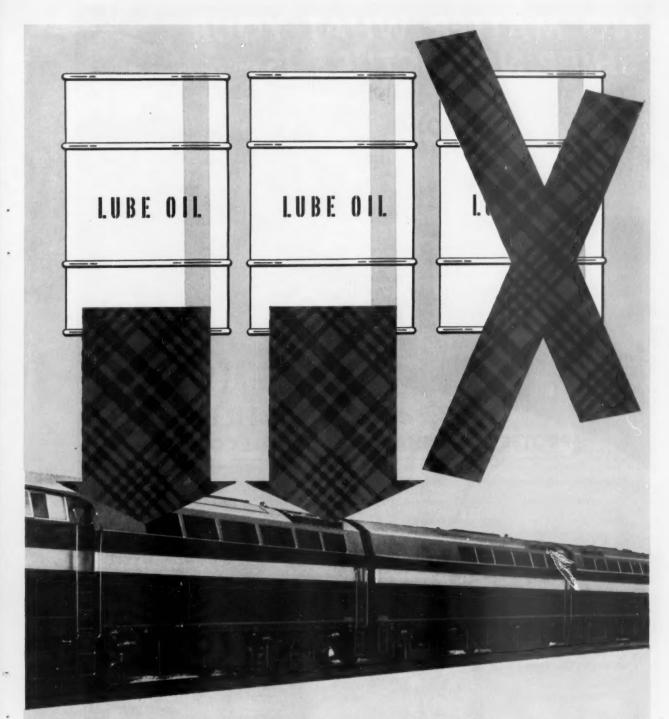
Outstanding lube oil economy is habitual for Baldwin-Westinghouse Diesel-Electric locomotives. In the toughest kind of freight and switching service, Thrifty Baldwins use surprisingly little lube oil.

Some roads report that the lube oil consumption of their Baldwins is as much as 33½ % lower, saving one drum of lube oil out of every three.



Six Reasons Why Baldwins Are Thrifty

- 1. Baldwins give as much as 8% more miles per gallon of fuel.
- 2. They consume up to 33 1/3% less lube oil.
- 5 to 15% fewer diesel engine and electrical parts decrease wear, replacements, and maintenance costs, and increase availability.
- 4. The Baldwin-Westinghouse system of dynamic braking has braking capacity which exceeds that found in the
- majority of today's locomotives—in some cases by as much as 50%—meaning less wheel and brake shoe wear—better control.
- They have the weight and controls that can increase hauling capacity up to three additional freight cars in the tough assignments.
- Standardizing on Baldwin-Westinghouse renewal parts ensures finer quality and service for trouble-free performance and peak availability.





BALDWIN-Westinghouse
DIESEL-ELECTRIC LOCOMOTIVES

.... they're thrifty



PROTECTS PERISHABLES UNDER ALL CONDITIONS Shipments of valuable perishables are at the mercy of extreme

Leading refrigerator car builders recognize this. That is why, for the better part of a century, they have been specifying all-hair insulation. They know that Streamlite Hairinsul is the one insulation that is fully efficient under all conditionsno matter how severe.

temperature changes unless properly protected. Only an effi-

cient refrigerator car insulation can reduce this hazard.

Other reasons why car builders specify Streamlite Hairinsul are listed at the right. These are just a few-there are more. Write for complete data.

LOW CONDUCTIVITY. Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity - .25 btu per square foot, per hour, per degree F., per inch thick.

reamlite HAIRINSUL

LIGHT WEIGHT. Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT. Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL, Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-support-ing in wall sections between fasteners.

COMPLETE RANGE. STREAMLITE HAIR-INSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.

WIGH SALVAGE VALUE. The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insula-tion offers a comparable saving.



Sets The Standard By Which All Other Refrigerator Car Insulations Are Judged

treamlite HAIRINSUL

TERESTORES OF THE

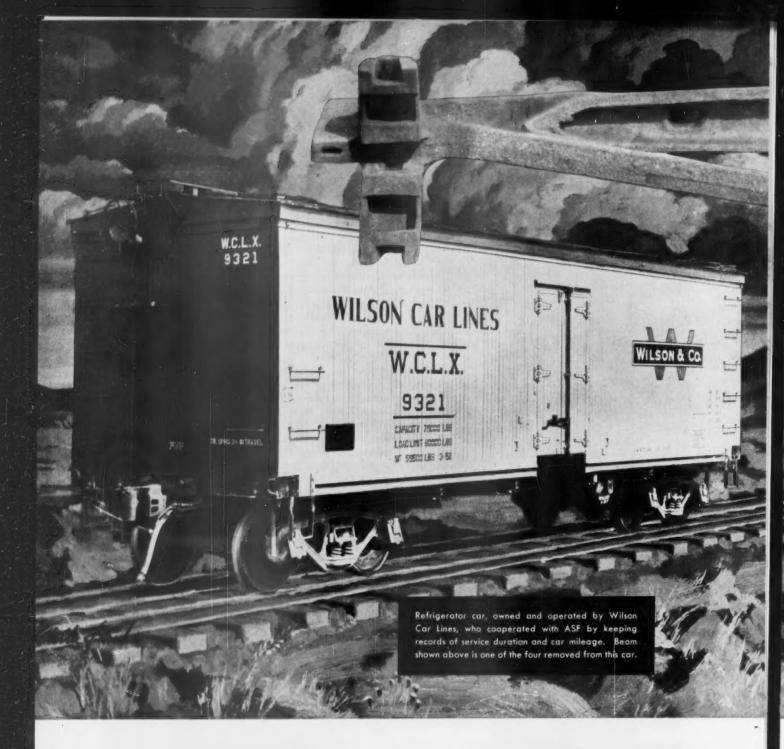
Dept. H39, Merchandise Mart, Chicago 54, III.

Rolling Steel Doors

Manually, Mechanically, or Electrically Operated



MAHON





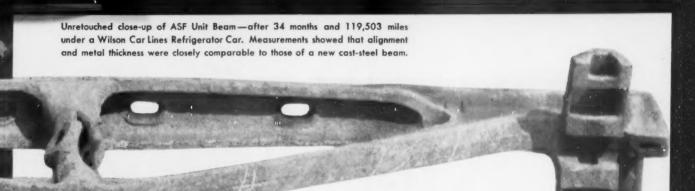
◆ 20% above requirements— on the AAR Static Test

Only.056' deflection at 18,000 lbs., compared to permissible .070' deflection. Two of these beams were then loaded to the breaking point—which proved to be almost four times their rated capacity!

38% above requirements— on the AAR Fatigue Test

The two remaining beams withstood an average of 1,032,181 loadings—well over a quarter of a million more than required for AAR certification. (Each loading 18,000 lbs., applied at the rate of 50 per minute.)





You'd think this ASF Cast-Steel Unit Beam was brand new instead of three years old . . . because test results proved

After II9,503 miles ... Still above AAR specifications!

Some just-completed tests of ASF Cast-Steel Unit Brake Beams will interest every railroad looking for ways to cut maintenance costs.

The beam shown here is one of a set that has traveled 119,503 miles during 34 months—on a Wilson Car Lines Refrigerator Car. Refrigerator service was deliberately chosen for the test because brine-induced corrosion makes it extra tough on running gear.

Before testing, the four beams were shotblasted to remove rust and scale. Measurement showed practically no loss of dimension or misalignment—and extremely light wear, considering length of service. For example, unit extensions were only about 1/16" undersize! And, here are the results of static and fatigue tests—made according to AAR specifications:

	STATIC TEST		FATIGUE TEST	
	Deflection at 18,000 lbs.	Set, after 30,000 lbs.	Maximum load before fracture	18,000 lb loadings
AAR Requirements	.070″	.010"	(None)	750,000
Average performance of ASF Unit Beams in service 3 years	.056"	.0012"	68,950 lbs.	1,032,181

In short, still far above standards! Find out more about the beam that maintains its strength and shape during prolonged service...and reduces your maintenance and replacement costs. Write us, or ask your nearest ASF Representative for more information!

Like modern side frames that replaced arch bar trucks . . . the MODERN BRAKE BEAM is the



AMERICAN STEEL FOUNDRIES

410 North Michigan Avenue, Chicago 11, Illinois

Look for this MINT MARK on the running gear you specify

Canadian Sales: International Equipment Co., Ltd., Montreal

AMERICA'S FIRST GAS TRUCK WITH ELECTRIC TRANSMISSION

The new Automatic

Entirely new engineering design produces America's first and only Gas Fork Lift Truck with Electric Transmission. No clutch! No gears to shift! No hydraulic torque converter or over-drive mechanism.

his new Dynamotive Gas Truck does for users of materials handling equipment what modern diesel-electric power has done for American Railroads. Its electric, infinite step transmission has no mechanical connections...transmits no "clutch shock" to engine...but brings to your materials handling jobs that fully controlled smooth flow of power which insures maximum economy and efficiency.



HERE'S WHAT AUTOMATIC'S



For further data about the new Dynamotive Truck, write:

ELECTRIC TRANSMISSION MEANS TO YOU: No gears to shift . No clutch to manipulate . No engine shock due to clutching . No hydraulic torque converter · No over-drive mechanism · No mechanical connection from engine to drive unit . Maximum comfort and ease of operation for driver . Foot operated lift and tilt . Interlocked dual brake system for maximum safety . Electric truck reliability . Infinite acceleration range with minimum power loss . Engine speed automatically adjusts to load requirement • Minimum engine wear-maximum life • Less fuel consumption . All advantages of torque converters and overdrive without mechanical devices . Minimum down time . Maximum accessibility . No aisle projections.

Plus these Automatic industry-proved features:

Silicone insulation for electric components . Heavy section rolled manganese alloy steel uprights . Ball bearing mounted carriage and upright rollers . Hydraulic safety fuses (with duo lift).

85 W. 87th St., Dept. A-4

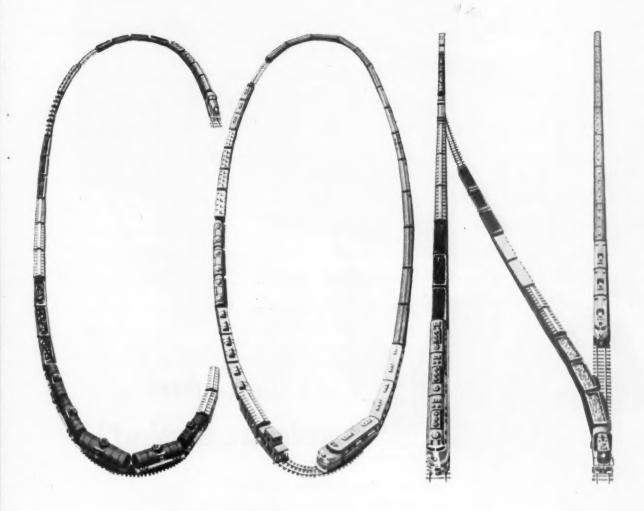
WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC DRIVEN INDUSTRIAL TRUCKS



©1953, Goodall Fabrics, Inc., Subsidiary Goodall-Sanford, Inc. (Sole Makers of World-Famous PALM BEACH* Cloth) *Registered Trade Mark GOODALL FABRICS, INC. NEW YORK BOSTON • CHICAGO • DETROIT • LOS ANGELES



... Specified by More than 100 Leading U.S. Railroads!

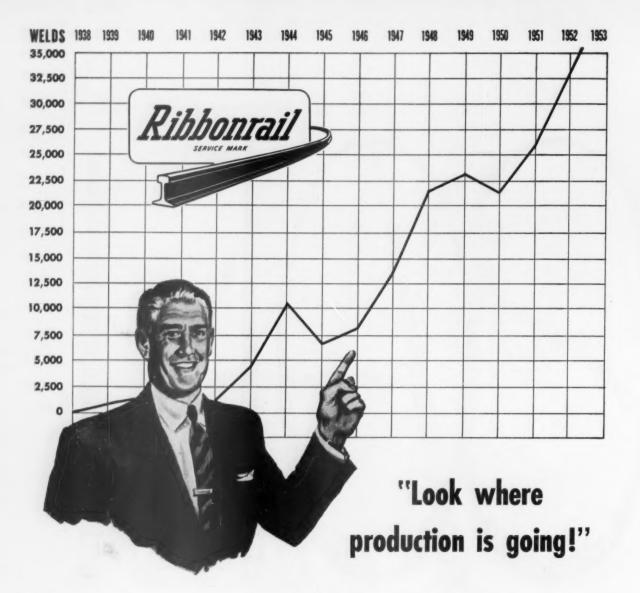


The answer to dependable Diesel lubrication is spelled GASCON®. An incomparable record of performance has made Sinclair GASCON the standard of quality – against which all other Diesel oils are compared. Most of America's top railroads have discovered this to be true – have you?

SINCLAIR RAILROAD LUBRICANTS

SINCLAIR REFINING COMPANY

RAILWAY SALES . NEW YORK . CHICAGO . ST. LOUIS . HOUSTON



Look at this curve to see how American railroads are increasing their use of RIBBONRAIL service. This 15 year production record means that hundreds of miles of continuous rail are in track and that RIBBONRAIL service is well beyond the experimental stage.

Write for your free copy of the latest "Report of Special (A.R.E.A.) Committee on Continuous Rail."

OXWELD RAILROAD SERVICE COMPANY

A Division of Union Carbide and Carbon Corporation

UEC

Carbide and Carbon Building Chicago and New York In Canada:

Canadian Railread Service Company, Limited, Toronto



"Oxweld" is a trade-mark and "Ribbonrail" is a service mark of Union Carbide and Carbon Corporation.



Get Two-Coat Protection in One Application!

Here's the way to apply paint to freight cars—thicker, quicker. The Sherwin-Williams Hot Spray system applies twice as much finish coat material in a single application . . . reduces painting costs even more because less material is needed, less wasted in overspray.

This new system nearly doubles shop capacity. It does away with drying time between coats . . . gets cars back in service faster. In addition, it provides longer-lasting good appearance and protection through more uniform application, better adhesion and higher gloss. And it eliminates most variables caused by temperature and weather.

Hot Spray finishing for freight cars, with Sherwin-Williams Hot Spray Synthetic Freight Car Enamels, has been thoroughly field-tested in railway service by leading railways.

S-W Hot Spray Finishes are part of a complete line of S-W finishes specifically engineered for railway service. Write for new S-W Hot Spray Brochure B-760. The Sherwin-Williams Co., Transportation Division, Cleveland 1, Ohio.



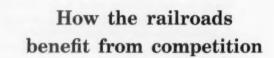
Cold weather application of Sherwin-Williams Hot Spray Freight Car Enamel. Inspection showed excellent coverage, uniformity and gloss in spite of 24-32°F, weather and outdoor location.





Unless they're Honeywell...

your 3-year old car heating



Competition created superior Honeywell car heating systems. It's another example of the benefits which the nation's railroads receive with Honeywell competing against other suppliers in the railroad car heating field. These benefits are expressed not only in better ways to do old jobs, but in lower prices achieved through competitive bidding.

systems are wasting your money!

Honeywell Car Heating outmodes all other systems

Is that a shocker to you? Minneapolis-Honeywell started a revolution in car heating systems when it entered the railroad field just a few short years ago.

To improve the equipment then on the market, Honeywell developed a simple electronic control system to create even heat throughout the car. It did away with costly wasted steam... "heat pile-up" so irritating to passengers... and the inefficiency of equipment duplication that is so unnecessary—and so expensive.

Honeywell pioneered modern car heating systems, and the Honeywell system will stay modern for a long time to come. You won't have to replace it in a few short years because it's badly obsolete. The first Honeywell equipped car is still in operation—and still modern.

So review your car heating systems. If you have Honeywell, your passengers are comfortable in all kinds of weather—and you make substantial savings because of much lower operating and maintenance costs.

If your cars do not have Honeywell, investigate our Multi-Jet Steam System. You can install it as a standard shopping procedure easily and economically.

Honeywell



Transportation Division

104 OFFICES ACROSS THE NATION

Moduflow Liquid System for new cars

Tests have convinced more and more railroads of the superiority of the low-cost Moduflow Liquid Heating System for new passenger cars. Passenger reactions were checked on actual trips, and they heartily approved the uniformly comfortable cars . . . even when outdoor temperatures ranged from 7 to 72 degrees! We strongly recommend this Liquid Heating System, and will be glad to send full details on request.

Here's why railroads get MORE



Freight Car Bearing Performance

THE figures at the right clearly indicate a trend to improved journal bearing performance, even with today's faster train speeds and heavier loads. Performance will improve still further with higher standards for maintenance and car servicing.

with higher standards for maintenance and car servicing.

Properly serviced and maintained, the solid bearing is capable of accelerating as rapidly and running as fast as practical operating limits will ever permit.

PERIOD	TOTAL CAR MILES	CAR MILES PER HOT BOX	
1951	34,726,490,070	172,703	
1952	34,313,975,558	190,109	
1952 (1st 6 Mo.)	16,934,609,076	212,882	
1953 (1st 6 Mo.)	17,149,062,399	237,334	

FREIGHT REVENUE

per car dollar invested



You get up to 20% more cars for your money when they're solid bearing equipped. That's 20% more hauling capacity for the same initial investment - plus a proved daily efficiency of 99.97% even with cars averaging 20 years old!

SOLID bearing freight car earns just as much as ${f A}$ one with any other kind of bearings – and it costs up to 20% less, too! These are facts. They add up to just one thing - the biggest possible return for each freight car dollar you spend. And you need that big return because, for reasons entirely apart from the type of journal bearing installed, a freight car has to earn its way in less than three hours a day.

Now what about maintenance and operating expense? Well, here's a question you can answer in part for yourself. Just take a good look at the passenger equipment you operate. Chances are some portion of your passenger cars have other than solid-type journal bearings installed. And if you figure in all your costs - the extra tools and facilities, the skilled labor and time, and inventories required, you'll see that you're better off with solid bearing cars where maintenance costs are concerned.

Bearing Efficiency and Operating Expense

So it becomes a question of bearing efficiency and daily operating performance. Well, here the facts about solid bearings are known. Throughout the year there's less than one failure for each 4,000 cars per day - an efficiency index of better than 99.97%, even though the cars average over 20 years old. New solid bearing freight cars do even better - often go millions of car miles without a bearing failure.

How to Lick Hot Boxes

Of course, this doesn't mean that hot boxes are not still a problem. But you can lick this problem best with lowcost solid bearing designs. Heat-resistant lining metals and low-cost alarms are already available. Improved lubricating methods are being developed. Combine these improvements with an intensified program to upgrade maintenance standards, and hot boxes will virtually disappear.

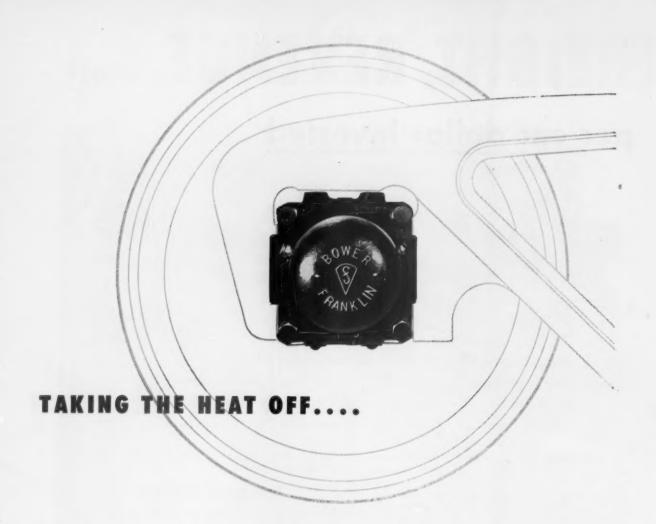
Then, too, you'll still have all the other advantages which solid bearings bring to railroad rolling stock. You can take the maximum load, make the fastest schedule. You'll save an average of 1,000 pounds per car and get the smoothest (and quietest) ride on any standard

> truck. But best of all, you'll be sure of the best possible bearing performance at the lowest possible cost.

Right for Railroads

...in performance ... in cost

MAGNUS METAL CORPORATION Subsidiary of NATIONAL LEAD COMPANY



Bower-Franklin journal boxes, equipped with dependable Bower straight roller bearings, are ready to help you carry more freight — at greater speeds — with no danger of hot boxes.

These high-quality bearings have already *proved* themselves in numerous other types of heavy-duty equipment — steel rolling mills, heavy trucks, earthmovers, cranes, shovels, and railroad generator-drive units, to mention but a few.

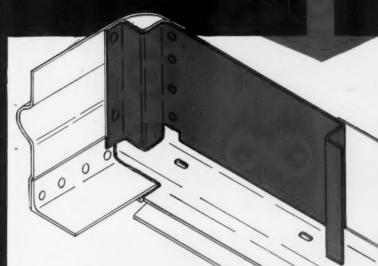
Sales and application engineering for the Bower-Franklin journal boxes are being handled by the Franklin Balmar Corporation. Additional information will be furnished on request.



FRANKLIN BALMAR CORPORATION

WOODBERRY, BALTIMORE 11, MARYLAND CHICAGO OFFICE: 5001 North Wolcott Ave., Chicago 40 This happened to a new car!

it couldn't happen here



INTERNATIONAL'S CORREC-TIVE DESIGN: An integral 3/16" W-section corner post, side-sheet and side post. nternational teel

EVANSVILLE 7, INDIANA

A HALF CENTURY OF MAJOR G-R-S DEVELOPMENTS in railway signaling

ELECTRIC INTERLOCKING
1889—at East Norwood, Ohio, by Taylor
Signal Company, predecessor of G-R-S.

2

ABSOLUTE PERMISSIVE BLOCK 1911—between Kinnear and Vinemount, Ontario

AUTOMATIC TRAIN CONTROL Intermittent inductive system—
1921—at Rochester, N. Y.

4

CAR RETARDERS 1926—at East St. Louis

CENTRALIZED TRAFFIC CONTROL
1927—between Stanley
and Berwick, Ohio

6

ALL-RELAY INTERLOCKING 1928—at Dome, Texas

NX INTERLOCKING 1937—at Girard Junction, Pa.

8

AUTOMATIC SWITCHING 1950—at Markham Yard, Chicago

SYNCROSTEP REMOTE CONTROL 1951—at Fort Plain, N. Y.

> AUTOMATIC RETARDER CONTROL 1953—at Kirk Yard, Gary, Indiana

From the earliest form of electric interlocking to the latest electronic developments in signaling, G-R-S systems and appliances have helped to make possible greater efficiency and increased safety of train operation.

Your G-R-S district office welcomes your inquiries for data, studies, and estimates.









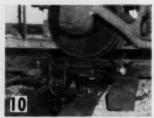














GENERAL RAILWAY SIGNAL COMPANY

MROSSROADS

Today, in the face of ever-increasing costs,

Railroads must either reduce their unprofitable services

or find new methods

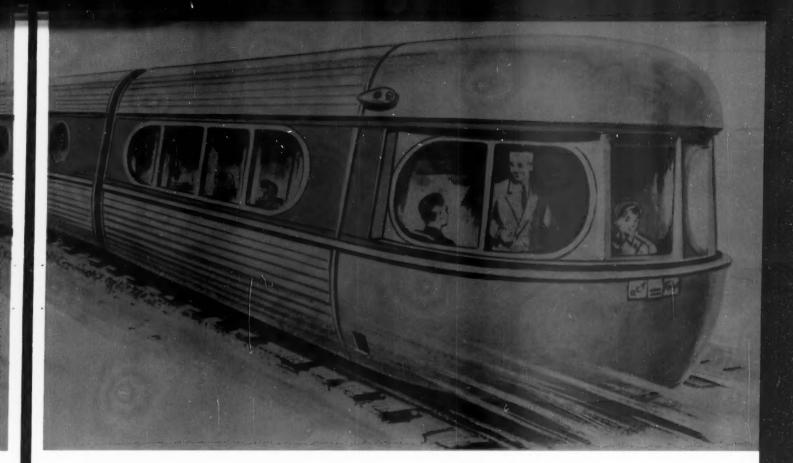
which will stop constant economic pressure.

On the next pages_a.c.f. presents some current answers

to the problems every Railroad faces

in making a profit for its investors.

Q.C.f. Talgo can well start a new era in American passenger service. Its potentiality for cutting operating costs and improving service should not be overlooked in planning for the Car Shortages mean lost business. The alert Railroad is ready to meet peak demands of shippers, plans his car-purchasing to anticipate future requirements. This mechanized approach to the assembly-line installation of antifriction bearings brings the bigger profits of fast freight service...an easier, smoother, faster ride (less freight damage)...lower maintenance...all within easy and practical reach.



NEW IDEAS AND DEVELOPMENTS ARE PRODUCING NEW REVENUE

The Q.C.E. Talgo Train, complete dieselization, standardized-design freight cars, anti-friction-bearing fast freight service... these are but a few of the developments that are both reducing operating costs substantially, and increasing revenues. And there are plenty more on the way.

Take the matter of passenger service, for example. Few Railroads today get a fair return. Some Railroads admittedly operate their passenger service in the red.

Yet, it can be profitable. For modern equipment properly utilized and promoted does attract more passenger revenue. The C.C. Talgo, for example, has not only attracted new passengers but has dras-

tically cut operating cost under adverse conditions.

Even freight, the ever-dependable profit maker, needs a 'shot-in-the-arm' to maintain revenue. New mass-produced Q.C.f. freight cars, and new ideas such as fast merchandise express are two positive steps which are producing additional revenue for progressive Roads now.

CAR BUILDERS TO AMERICA'S RAILROADS





TIME FOR DECISION

The time to take advantage of new developments is now. Revenue is waiting for those who are alert to every possibility.

O.C.f. has made a career of keeping abreast of all problems affecting rail transportation—with an eye to the future. On our drawing boards and on the rails are developments which can and are cutting costs, increasing efficiency, and producing revenue. We'll be glad to discuss them with you generally or specifically.



Q.C.f.

St. Louis
Cleveland
LERICAN CAR AND FOUNDRY COMPANY

Philadelphia Washington

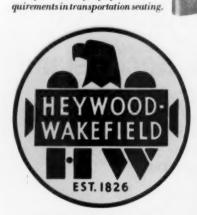
New York

Heywood-Wakefield Seating for Long Island Railroad's Twenty New **Commuter Cars**





One of the 20 modern electric commuter coaches being built for the Long Island Railroad by Pullman Standard Manufacturing Company. All will be equipped with Heywood-Wakefield seating.



Wakefield's ability to fulfill varied re-

Transportation Seating Division Gardner, Mass. Orillia, Ontario, Canada In Canada: Railway & Power Engineering Corp., Ltd., Montreal

The ingenious construction of the car interior provides seating for 128 passengers with the greatest possible comfort for all. Unusually wide seats are foam-rubber cushioned and upholstered in durable vinyl plastic. The seating arrangement provides ample leg-room and is designed so that cleaning equipment can be thrust beneath without obstruction.







Teletype handles over 11,000,000 messages per year for the Rock Island

The Teletype center shown above is in the Armourdale, Kansas, freight house of the Rock Island. It typifies the road's up-to-the-minute communications system.

In 1936, the entire Rock Island line used only 11 Teletype printers. Today 139 printers, 50 reperforators, 49 transmitter-distributors, one gang transmitter and 35 perforators provide a system-wide Teletype network which handles over 11 million printed messages each year.

A large part of the Rock Island's increased message traffic arises from the practice of transmitting wheel reports and consist reports by Teletype. These reports serve as advanced switch lists and are further used for car tracing.

Each Teletype printer is equipped with a hectograph ribbon so that multiple copies of messages may be prepared for distribution when necessary.

Today, 58 other American railroads besides the Rock Island rely on dependable, printed Teletype communications to speed message traffic.



FOR HOT-BOX PREVENTION

REPKD X PLYPAK

RISIR

A.A.R. Stencil Showing That Journals are Packed With Plypak

A.A.R. APPROVED

FOR UNLIMITED

USE IN INTERCHANGE

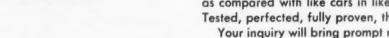
Repack with

Contains and Retains waste to **Provide positive** Lubrication

While adequate inspection promotes "on time" performance, a car protected with PLYPAK retainers (as indicated by this stencil) requires least attention, PLYPAK holds and retains waste where it belongs for positive and ample lubrication.

A one year service-test of 24,000 PLYPAK retainers on 3,000 hopper cars showed a marked reduction in the incidence of hot-boxes as compared with like cars in like service without PLYPAK protection. Tested, perfected, fully proven, the PLYPAK is now available.

Your inquiry will bring prompt response.



VAUGH EQUIPMENT COMPANY

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

CHICAGO - ST. LOUIS - CANADIAN WAUGH EQUIPMENT COMPANY, MONTREAL

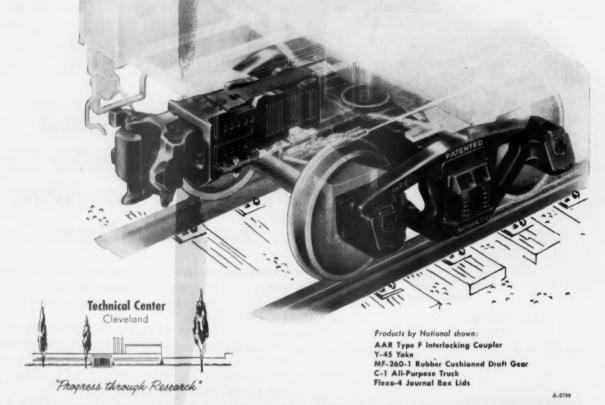
The smoothest distance between two points—

National products smooth out end-to-end, vertical and lateral shocks . . . make satisfied shippers by reducing lading damage.

Improvement of riding qualities is a basic concept of National design philosophy

—and has been for over 85 years.

NATIONAL Draw Gear Assemblies and Freight Car Trucks



NATIONAL MALLEABLE and STEEL CASTINGS COMPANY

COUPLERS . YOKES . FREIONT TRUCKS . DRAFT GEARS—RUSGER AND FRICTION . JOURNAL BOXES AND LIDS



Southern Pacific Lines



The friendly Southern Pacific

Order... MULTI-SERVICE BALLAST CARS

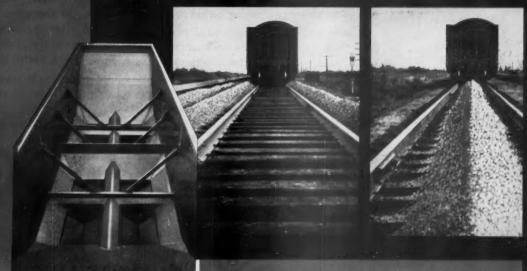
equipped with

ENTERPRISE BALLASTING MECHANISM



70-ton Southern Pacific welded ballast car built by Pullman-Standard Car Manufacturing Company, Butler, Pa. equipped with ENTERPRISE ballasting mechanism.

A side Discharge Car
A Center Discharge Car
Operative Either or Both Sides
Simultaneously



Door Operating Devices Exclusively Since 1905

ENTERPRISE

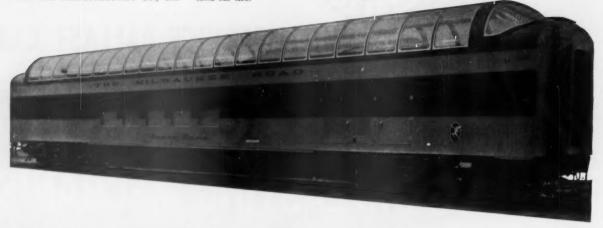
RAILWAY EQUIPMENT COMPANY

59 East Van Buren Street

Chicago S. Illinois

SAVINGS ARE SURE when you cut the weight of your cars by designing to use high strength, low alloy steels containing nickel. This "Dome" type passenger car, built by PULLMAN STAND-ARD CAR MANUFACTURING CO., Chi-

cago, III., utilizes the superior stamina and corrosion resistance of U*S*S CORTEN steel, produced by UNITED STATES STEEL CORP., Pittsburgh, Pa., to save power, minimize maintenance and extend car life.



High strength low alloy steel assures substantial economies cuts deadweight...lengthens car life

Without sacrificing strength or safety, the majority of railroads have trimmed deadweight from cars by utilizing high strength, low alloy steels containing nickel . . .

Under actual operating conditions on major roads, repeated tests have shown the nickel alloyed steels to be five times more corrosion-resisting than carbon steels, and two and one-half times that of copper-bearing steel. This superior corrosion resistance adds years of useful service to car life.

The smaller quantity of rust which forms on high strength, low alloy steels containing nickel is of a more impervious nature than the rust which forms on carbon or copperbearing steels. Denser and more adherent, it also accounts for a longer paint life than is obtained on copper-bearing steel coated with the same paint system.

You can cut deadweight since thinner,

lighter sections of the nickel alloy steels, provide the same strength and ruggedness as thicker, heavier sections of plain carbon steels. On the other hand, by using these nickel alloy steels with the same section thickness as the plain carbon steels, you add years to the useful life.

In addition to resistance to corrosion and superior strength, the nickel alloy steels withstand shocks... battering and piercing... and abrasion. And they show excellent response to usual fabricating operations, including forming and welding.

Especially suited for railroad applications, high strength, low alloy steels containing nickel along with other alloying elements are produced under various trade names by leading steel companies. Consult us on the use of these steels in your products or equipment. Write today.

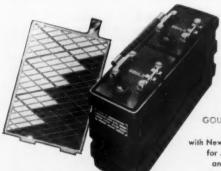


THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET, NEW YORK 5, N.Y.



THANKS TO BATTERY POWER!

Transportation is not enough. You've got to provide comfort. Passenger comfort depends on continuous high-level performance from your batteries. You get it with Gould Kathanode Air Conditioning and Car Lighting Batteries. The new Diamond "Z" Grids built into these batteries provide the high level power for today's high-rate compressors and other current demands. Increase car availability . . . cut maintenance costs . . . reduce yard charging . . . get utmost battery power dependability.



Specify GOULD KATHANODE BATTERIES

with New Diamond "Z" Grids for Air Conditioning and Car Lighting



GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries

61953 Goold-Hatland Batteries, inc.



Lewis altite railroad fasteners















The nation's great railroads use Lewis Sealtite fasteners. Accurately engineered, designed to do a better job, Sealtite products are tough, durable, made of finest grade metals for heavy duty. They meet the most exacting specifications.

More than 20 years of manufacturing experience have established Sealtite's top quality in the industry. Such famous Sealtite features as the patented fins, for better seating, Sealtite's accurate threading, for easy installation, and many others, have given Lewis Sealtite products a "Class I" reputation in the field.

The next time you specify fasteners, specify Lewis Sealtite, a complete line of first grade fasteners for America's leading railroads.

All Sealtite products are available in HOT-DIP GALVANIZED, SEALED-IN-ZINC finish, which stops rust and corrosion. Tests prove that the molten zinc bath gives Double-Life, greater economy through fewer replacements.

Serving 85% of America's Class 1 Railroads

See your Lewis representative, or contact factory for samples, prices, full details.



BOLT & NUT COMPANY 504 Malcolm Ave. S. E. Minneapolis 14, Minnesota

Slotted Head



Large-Head Car Bolt

Sealtite Bolts available with Loktite Nut #2, washer nut, or std. sq. and hex. nuts

Soultite

THE ENGINEER'S REPORT

LUBRICANT Calol Rail + Flange Lubricant

LUBRICATOR Mechanical

LOCATION California + Oregon

CONDITION BIENT temp. - 20° F. to

HO° F. Continuous use

TEST PERIOD 10 months

New rail-flange lubricant meets toughest conditions!

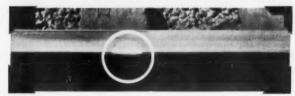
CALOL RAIL AND FLANGE LUBRICANT, tested continuously for 10 months at six locations on a major western railroad, proved entirely satisfactory. Although air temperatures ranged from 20 below zero to 110 above, the lubricant retained correct consistency for good pumpability both in storage and lubricators. Grease buttons on wiping bars remained in position even in direct sunlight. Coverage was excellent, as demonstrated by photographs below of rails at successive curves serviced by the lubricator shown at right.



FILM OF CALOL RAIL & FLANGE LUBRICANT at first curve. Circled area is wiped clean for contrast.



FILM OF LUBRICANT on second curve from lubricator.



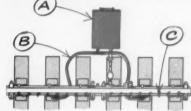
THIRD CURVE. Note grease is still well distributed.



FREE CATALOG: "How to Save Money on Equipment Operation," a new booklet full of valuable information, will be sent you on request to Standard Oil Company of California, 225 Bush St., San Francisco, Calif.



How Calol Rail and Flange Lubricant Cuts Track Maintenance Costs



- A. Stable in use and storage—will not separate, "bleed" or harden.
- B. Pumps freely from lubricators from below zero temperatures to over 100 degrees. Retains even consistency.
- C. Forms stable buttons which resist high temperatures. Very adhesive — carries for long distance on rails. Resists tendency to pull over tops of rails.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20 • STANDARD OIL COMPANY OF TEXAS, El Paso THE CALIFORNIA OIL COMPANY, Barber, New Jersey • THE CALIFORNIA COMPANY, Denver 1, Colorado





SIER . . . MORE ECONOMICAL

with AMCRECO FRAMED BRIDGE TIMBERS TIES and PLANK

Amcreco
Lowry Process
Creosoted
Products

Timbers • Bridge Ties

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Poles • Plank

Build longer lasting timber bridges — faster and easier by building with Amcreco framed bridge timbers, ties and plank. Speedy erection means fewer man hours and lower first costs.

You save in the long run too, because Amcreco products are pressure treated with creosote to protect the natural strength of the wood from insects, fungi and marine borers. This means extra years of service with reduced maintenance throughout the life of the structure.

Take advantage of our nearly half a century of experience in serving the railroad industry. Any of our conveniently located sales offices will be pleased to go over your next requirements with you.

AMERICAN CREOSOTING COMPANY

COLONIAL CREOSOTING COMPANY



GEORGIA CREOSOTING COMPANY

GENERAL SALES OFFICE—CHICAGO, ILLINOIS
18 FIELD SALES OFFICES TO SERVE YOU

Reduce Shock!

Shock./
Fatigue./
Failure./

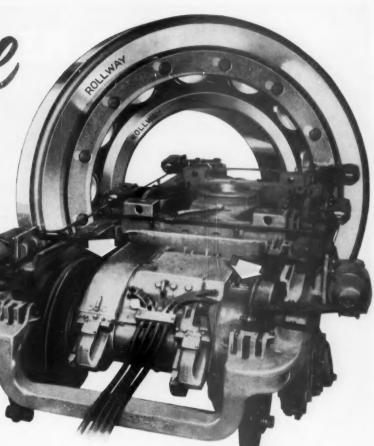
on Pinion and Commutator Bearings



Our engineers will gladly work with you in the solution of your bearing problems. Confidential consultation. No charge — no obligation



Complete Line of Radial and Thrust Cylindrical Roller Bearings



he right-angle precision of Rollway bearings assures the least amount of friction under the widest variety of load conditions. The long-line contact of perfect cylindrical rollers secures even load distribution, cutting down chances for channeling and brinelling. Side-shock, end-rub and skew have small opportunity to develop within the precise fitting of rollers, separators and roller-riding bronze retainers.

Properly installed and maintained Rollway bearings fulfill every expectation established by performance records dating from the first application of right-angle design principles in 1931.

From the very start, Rollway traction motor bearings have been made with roller-riding cages, plus larger, longer, crowned rollers that give the greatest capacity and longest mileage.

Rollway Bearing Co., Inc.
Syracuse 4, N. Y.

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Milwaukee Seattle Houston Philadelphia Los Angeles San Francisco

FAR-AIR* DYNAMIC GRILLES DO DOUBLE DUTY 52 52



2. Add Beauty to Diesel Equipment

When installed over air intake filters on Diesel Electric and Gas Turbine locomotives, FAR-AIR Dynamic Grilles effectively deflect snow, dirt and other foreign particles, yet allow unimpeded entrance of air. The higher the air velocity passing the grille face, the greater the effectiveness.

Available in stainless or plain steel, FAR-AIR Dynamic Grilles add to the appearance and service life of any locomotive. This new Grille can be supplied in practically any size and for a variety of applications.

Farr engineers are always available to discuss special requirements, always glad to assist in solving difficult filtration problems. Write today for information on FAR-AIR Dynamic Grilles and other FAR-AIR railroad equipment.









*Trade Mark Reg.

FARR COMPANY

Manufacturing Engineers

CHICAGO · LOS ANGELES · NEW YORK

Mf'd under license by Control Equipment Co., Ltd., Montreal, Canada



famous line of finishes for freight rolling stock—brings important savings in time and labor to shop, traffic and operating departments.

One coat of Hot-Spray CARHIDE is equal to two coats applied cold.

- In Hot-Spray CARHIDE, heat is used in place of conventional thinner to adjust viscosity to weather and temperature conditions. In all seasons of the year, it goes on more uniformly, has better adhesion, dries quickly to a higher gloss, is more durable, and retains its initial appearance for a longer time.
- Hot-Spray CARHIDE can be applied with approximately half the usual air pressure. This lessens the amount of "fog" in the paint shop-more of the solid material reaches the surface being
- Refinishing is speeded as half the time needed to apply two coats, as well as drying time between coats, is eliminated. Shop capacity is practically doubled without increasing space, manpower or equipment.
- We'll be glad to give you further information about this new kind of freight car paint. A wire, telephone call or letter from you may save time and money.

PITTSBURGH PLATE GLASS CO., Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.: Atlanta, Ga.; Houston, Texas; Torrance, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Michigan. The Threaher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

Pittsburgh Railway Finishes For Every Need

CARHIDE—for wood and metal freight cars of all types.

CARHIDE (Alkali and Acid-Resistant)-for covered hopper, refrigerator and tank cars.

LAVAX SYNTHETIC ENAMELS—for locomotive and passenger cars.

STATIONHIDE—adds beauty and attractiveness to stations.

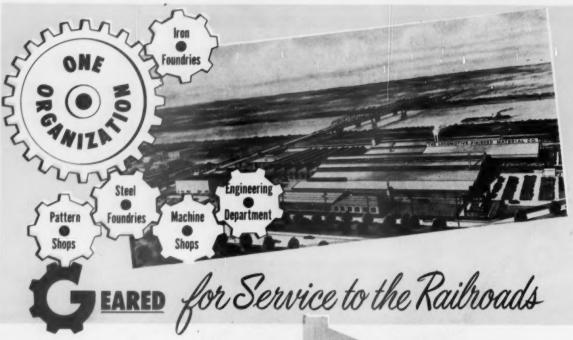
IRONHIDE—for iron and steel fixed properties.

SNOLITE-white, fume-resistant paint for signs, crossing gates, fences and cattle guards.





PLATE GLASS COMPANY SBURGH



The LFM Co. has served the railroads for 80 years. In this time LFM has built a wide understanding of the railroads' needs and problems. This knowledge and experience coupled with trained personnel and facilities means LFM is geared to better engineer and produce railway equipment.

The modern, complete LFM facilities are all under one management and housed in two great Mid-western plants covering more than 15 acres of ground.

The invitation is always open to all the railroads to utilize our highly specialized organization at any time to solve present problems or meet future needs.





Adjuster—Completely designed, engineered and produced by LFM, this automatic adjuster offers simplicity of design, installation and maintenance found in no other adjuster.



the LFM steel frog offers improved type rail joints, patented supporting shelf and integral tie plates and rib construction.

THE LOCOMOTIVE FINISHED MATERIAL CO.

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DIESEL LOCOMOTIVE ONE PIECE TRUCK FRAMES

FOR OVER 80 YEARS A MAJOR SOURCE OF SUPPLY FOR RAILROAD CASTINGS



TWO GREAT PLANTS Producing for America's Railroads

Commonwealth Cast Steel Products for the railroads of the world are produced in the two mammoth plants of General Steel Castings. Throughout the years, facilities and methods have been constantly improved and expanded until today they are the two largest and most advanced plants of their kind in the world.

With its experienced manufacturing

staff, two modern foundries and extensive machining facilities, General Steel Castings is especially equipped to develop and produce Commonwealth Products. Engineering, production, sales and service staffs, with many years of specialized training and experience, are always available to advise and assist railroads and builders with their locomotive, passenger car and freight car problems.

GENERAL STEEL CASTINGS

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Add more years of service...



Seal with J-M Packings and Gaskets . . . Whether your service requirements are usual or unusual, your equipment can have tight, long-lasting joints. Johns-Manville offers you a choice of many packing and gasket materials to meet your requirements.



Repair refractory lining with Blazecrete®... For heavy patching by troweling in high temperature equipment this hydraulic-setting refractory eliminates ramming and tamping. Firecrete®, a companion refractory, is used to cast special shapes and linings ready for use in 24 hours. Shrinkage and spalling of both materials is negligible.



Cover car heating pipes with Thermo-Wrap®...This improved lace-on type pipe insulation gives maximum protection to heating lines throughout the length of the train. It is easy to install—fits tight and stays tight—withstands the impact of rain, sleet, snow and flying ballast.



Apply Flexstone Roofing . . . Each ply of this asbestos roofing is a flexible covering of stone. It is fireproof and rotproof. Its asbestos felt construction provides a amouth surface and eliminates recogning.



Johns-Manville ASBESTOS PRODUCTS for peak performance, longer life and lower maintenance costs

HERE ARE 5 ways you can pare your maintenance costs... with Johns-Manville products designed to stand up under the hard wear and tear of railroad service. Your Johns-Manville representative will be glad to give you complete information—or you can get all the facts by writing to Johns-Manville, Box 290, New York 16, N. Y. In Canada, address 199 Bay Street, Toronto 1, Ontario.



Use Transite® Pipe for waterlines... This asbestoscement pipe cuts water line costs because it resists corrosion... withstands vibration... and because its high water carrying capacity helps keep pumping costs to a minimum. Its light weight and easily assembled joints simplify installation.



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96 YEARS OF SERVICE TO TRANSPORTATION

Another Washing Problem Solved!!

The Famous HIAWATHAS of THE MILWAUKEE ROAD are washed daily ENROUTE at Miles City, Mont., with

SANTA FE . ROCK ISLAND . BURLINGTON

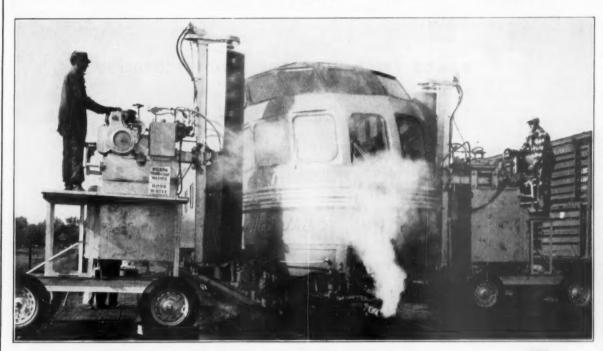
MILWAUKEE ROAD

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ADVANTAGES:

- 1. Completely portable without limitations for single or multiple track operation
- Entirely self-contained including water, detergent and power supply
- 3. Two men clean 14 car train in ten minutes
- Saving in labor plus cleaner equipment will more than justify expenditure
- 5. Washing trains enroute creates most favorable public impression
- One Railroad reports washing 24,000 cars with one set of brushes
- 7. Readily lends itself to varying cleaning operations

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BARCO Aiding Railroad Progress

The long recognized dependability of Barco Products* for Railroad Service stems directly from superior engineering and superior construction. Use these modern aids to Efficiency . . . Better Service . . . Lower Costs. BARCO stands for RAILROAD PROGRESS!

BARCO SPEED INDICATORS AND RECORDERS

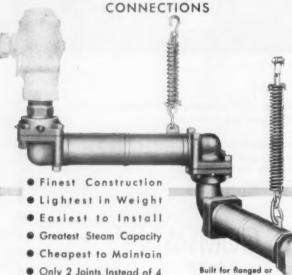
Superior accuracy inherent in Barco Speed Indicators and Recorders is one of the big reasons why many users now insist on installation of these instruments on their finest, new road locomotives. Barco accuracy stems from the basic all-mechanical design features of the equipment - features that also make for dependability, easier maintenance, and convenience to the user. Barco Recorders pay for themselves by giving you FACTS needed to insure EFFICIENT . . . PROFITABLE . . . SAFE operation of motive power. Let us give you complete information.



THE BARCO SWITCH ENGINE RECORDER

BARCO STEAM HEAT

Only 2 Joints Instead of 4



The Barco Switch Engine Recorder is a modern "time study" instrument that makes a chart record of what your switch engines are doing each day. These simple, accurate instruments provide Operating Departments with information needed to eliminate many delays, reduce overtime costs, and get more work handled. Quickly installed and easy to use, the Recorder shows: Speed . . . Time . . . Mileage - and clearly records: Time the locomotive is idle . . . Time it is moving ... Speed... Distance traveled forward and in reverse. Ask for catalog.

> BARCO Manufacturing Co.

501B Hough Street Barrington

FREE ENTERPRISE-THE CORNERSTONE OF AMERICAN PROSPERITY

screw type end valve.



uick low-cost delivery
of chilled car wheels
from the AMCCW plant near you



You can get chilled car wheels. You can get them promptly. What's more, you can get them from an AMCCW plant on or near your line, saving "foreign line" freight charges.

All this spells economy because it means lower inventory, smaller invest-

All this spells economy because it means lower inventory, smaller investment in stocks of new wheels.

All AMCCW plants produce the improved car wheel with more brackets to give thicker, heavier, more continuous flange support . . . and with a heavier tread on both rim and flange sides.



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In good supply
Available locally
Short-haul delivery
Reduced inventory
Low first cost
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Increased ton mileage
High safety standards
AMCCW plant inspection
Easier shop handling



Great Northern Railway Company, Minneapolis, Minn.

"STANDARD PRACTICE"

ON THE GREAT NORTHERN:

ROSS TRUCKS CHANGE OUT WHEELS

It's standard practice in Great Northern's Union Yard in Minneapolis to use this Ross fork truck to change out freight car wheels. It's but one of many time- and money-saving applications of fork trucks to railroad maintenance problems.

The pneumatic-tired fork truck is the fast, safe way to handle car wheels for rip track operations. From flatcar to storage rack to placement in the "A" frame, the fork truck easily handles 2,200 lb. wheel and axle

assemblies. When used in replacing a coupler and draft gear assembly, the fork truck enables two men to finish the complete operation in 10 minutes instead of the usual 30 to 45 minutes.

There's practically no limit to the usefulness of the Ross pneumatic-tired truck in railroad maintenance operations. Why not look into some of the ways to cut your yard costs? Write us for details . . . there's no obligation on your part.



ROSS CARRIER LINE
Industrial Truck Division
CLARK EQUIPMENT COMPANY
Benton Harbor 24, Michigan

What's in a Name?

In the dlake name, there is ependability that never fails...

ong-lasting beauty of design...an

cknowledged reputation for craftsmanship...the now-how of an unequalled staff of specialists...and the xperience gained from almost a century of manufacturing for the transportation industry.

THE

Adams & Westlake

COMPANY

Established 1857 • ELKHART, INDIANA Chicago • New York Yes, the ADLAKE name is a pledge of quality...and The Adams & Westlake Company has always kept faith with its customers. No effort is spared to make sure that every customer gets precisely what he bargained for...that he is completely satisfied.

Manufacturers of ADLAKE Specialties and Equipment for the Transportation Industry.



When You Need . . .

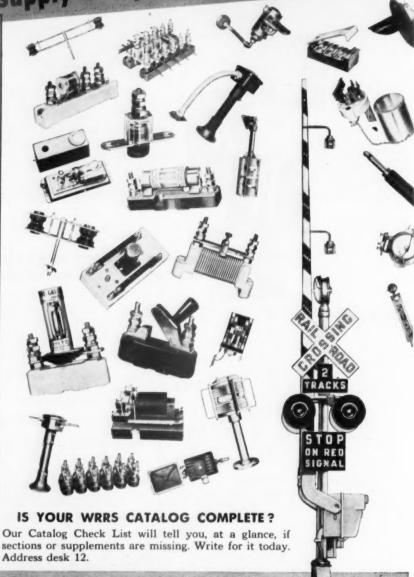
• Signaling and Communications Equipment

- Railroad-highway Crossing Signals and Safety Devices
- Movable Bridge Accessories

SIMPLIFY YOUR BUYING order from WRRS—one big reliable source of supply for your requirements

Our catalog lists more than 1700 items under these classifications:

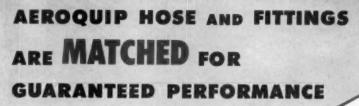
- Model 10 Signals
- Model N-N Electric Traffic Gates
- Electric Bridge and Pier Lights
- Autoflags
- Flashing Lights
- Crossing Bells
- Crossing Signs
- Test Boxes
- Pole Boxes
- Junction Boxes
- Bootlegs
- Bonds
- Lightning Arresters
- Resistance Units
- Fuse Blocks
- Control Panels
- Communications Accessories
- Electrical Testing Instruments





WESTERN RAILROAD SUPPLY CO CHICAGO 8, ILLINOIS





No skill or special training is required to assemble Aeroquip Flexible Hose Lines by hand in a matter of minutes! YOU CUT COSTS because Aeroquip fittings are detachable and may be used again and again. YOU REDUCE INVENTORY because with Aeroquip bulk hose and a few fittings you can fill practically all your hose line requirements. YOU REDUCE DOWNTIME because with Aeroquip on hand, quick hose line replacements are available at all times.



Oil nipple and inside of hose liberally.



Screw nipple into



Install fitting on other end,

Aeroquip

AEROQUIP CORPORATION, JACKSON, MICHIGAN

SALES OFFICES: Burbank, Calif. • Dayton, Ohio • Hagerstown, Md. • High Point, N. C. • Miami Springs, Fla. • Minneapolis, Minn. • Portland, Ore. • Wichita, Kan.

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AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

REG TRADE MARK



WHEN BORASCU'S IN...WEEDS STAY OUT!

Weeds and grasses can't grow on ground that has been properly treated with Borascu! It destroys weeds and it stops them—that's one reason more roads use Borascu than any other weed-killer for protecting timber structures from disastrous grass and brush fires. Economy, ease of application, safety, and long-lasting results are other deciding factors for this popularity of Borascu over all others. A free demonstration of Borascu on your road, under all conditions, is yours for the asking. Write for details today!



NOTHING TO MIX
NO WATER TO HAUL
NONPOISONOUS
NONCORROSIVE

TO FERROUS METALS



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BRIDGE MODERNIZED

with minimum interruption in traffic



AMERICAN BRIDGE uses unique method in replacing 61-year old structure on Illinois Central's busy main line

O NE of the most interesting modernization jobs in recent years is the new superstructure for Illinois Central's busy main line bridge over the Ohio River at Cairo, Illinois.

To accommodate today's heavier, faster traffic, this important railroad replaced its 61-year old nine-span structure with 12 modern spans.

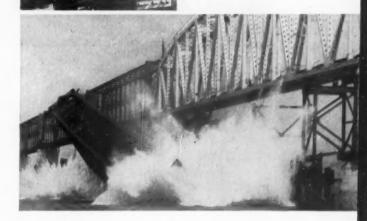
American Bridge, because of its skill, know-how and wide experience, was the logical choice to perform the major construction feat of building the new superstructure on the original piers with a minimum interruption in traffic.

The first old span of the bridge was rolled off its piers onto temporary falsework and the new 518-foot, 1,700-ton span moved into position and opened to service after a traffic interruption of only 20 hours. The old span was launched like a ship into the river 100 feet below for easy removal. The same procedure was followed span by span until the entire bridge was completed.

While this is the first time this method has been used on a job of such magnitude, it is a typical example of the part American Bridge is constantly playing to help our vital rail-road systems meet the needs of growing America.

INTERESTING FACTS

- 6 deck-truss spans, 197' 7"
- 4 thru-truss spans, 400' 111/2"
- 2 thru-truss spans, 518' 11"
- Bridge is single track.
- · Steel used, 10,000 tons.
- Erecting procedure:
 Illinois Central R. R. and
 American Bridge
- Consulting Engineers:
 Modjeski and Masters.



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SOUTHERN RR: 140,000 lb. capacity flat cars. General Steel Casting Co. Commonwealth underframe. Equipped with Hyatt roller bearings.



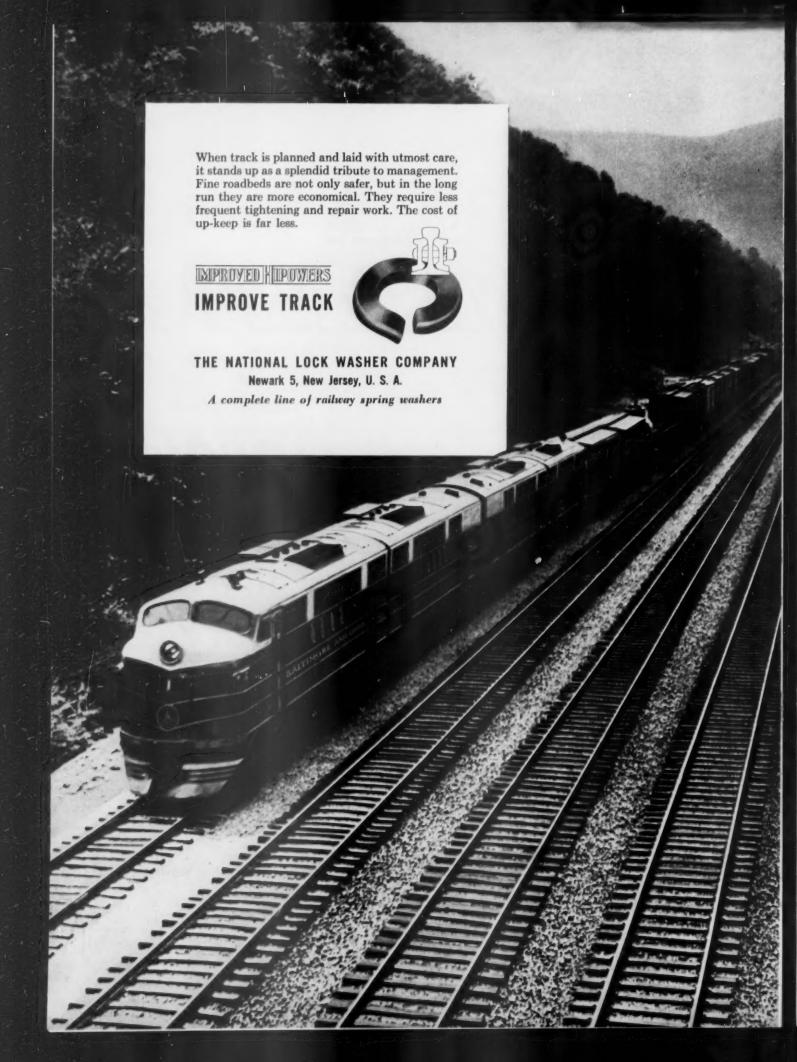
MONON RR: 140,000 lb. capacity composite gendola cars. Fabricated underframe. "Special" cars for industrial requirements are *standard* procedure here at Thrall. At the same time, "Standard" cars for interchange service benefit from *special* custom shop construction at interesting prices. How can we offer an attractive proposition on both? Flexible production facilities plus 38 years of developing them pretty well sum it up.

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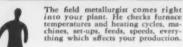
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The Republic Field Metallurgist talks over his report with Republic's Mill Metallurgist. Experienced in producing alloy steels, he adds his knowledge, checks it against your problem. And since Republic controls its alloy steels from ore to finished product, he can trace heats of steel.



木木

The field metallurgist next talks things over with the Republic Laboratory Metallurgist. His data on tests of alloy steels is added to the material of the field and mill metallurgist.



Then, all three men put their heads together and come up with a recommendation that is the result of pooling their findings and their experience with alloy steels. And since Republic pioneered the manufacture of alloy strels, this recommendation is based on solid data.



The Republic Field Metallurgist passes this recommendation on to your engineers and plant personnel. He works with them to see that your problem is solved satisfactorily, right in your plant. It's his job to see that you get all the advantages out of the alloy steels you use.

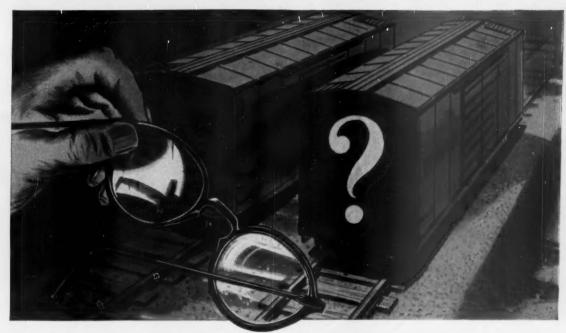


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Motorola 2-Way Radio is an indispensable tool of modern railroads. Investigate its advantages today!



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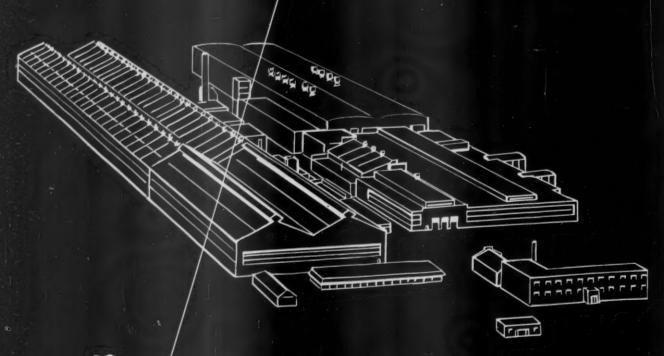
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Current Publications

PAMPHLETS

BIBLIOGRAPHY ON LOW TEMPERATURE CHARACTERISTICS OF STEELS, 1904-JUNE 1953, with AUTHOR INDEX, by Katherine Janis. 48 pages. International Nickel Company, 67 Wall st., New York 5.

Lists chronologically 468 U.S. and foreign magazine articles, translations, pamphlets and books on the subject. It was prepared by Miss Janis for distribution at the Special Libraries Association booth at the Metals Show in Cleveland.

BULLETIN NO. 89. 176 pages, illustrations, drawings. Railway & Locomotive Historical Society, Baker Library, Harvard Business School, Boston, Mass. \$2 to members; \$3 to non-members.

Fred Jukes continues his history of locomotive valve gears, the first installment of which appeared in Bulletin No. 88, and covered three groups of gears, i.e., early valve gears, hook or grab motions, and link motions. This section treats of gears on the Hack-worth principle. Frank P. Donovan, Jr., contributes a short biography of Henry Villard; and Charles E. Fisher. the first of three chapters covering steam locomotives of the Pennsylvania. Other articles cover the Mason & Oceana, a logging railroad in Michigan; the diary of Horatio Allen, covering his activities in England in 1828; and a brief account, together with a locomotive roster, of the Pittsburgh, Chartiers & Youghiogheny.

MOTOR TRUCK FACTS, 1953 EDITION. 56 pages. Automobile Manufacturers Association, New Center bldg., Detroit 2, Mich. Free.

Covers production, registrations, employment, and taxes in the "motor truck" industry. Included also are data on the age of trucks and the use of both buses and trucks. Formerly a biennial publication, it is to be issued yearly in the future as a companion to the automotive industry's statistical handbook, "Automobile Facts and Figures."

ROOKS

A TREASURY OF RAILROAD FOLKLORE, edited by B. A. Botkin and Alvin F. Harlow. 530 pages. Crown Publishers, Inc., 419 Fourth ave. New York 16. \$4.

Combining a century and a quarter of stories, tall tales, traditions, ballads and songs, here are told spell-binding tales of iron horses and iron men—boomers, brass hats, hoggers, tallow pots and gandy dancers. Here, too, are railroad saints and sinners, brave engineers, robbers and gamblers, hoboes, empire builders and tricksters, whose exploits and achievements all mark



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milestones in the adventurous history of railroading. Scattered through pages of this book the reader will find the names of Peter Cooper, Commodore Vanderbilt, Andrew Carnegie, Jesse James, Jim Hill, and many others. There are accounts of runawa, trains, railroad wars, robberies, pranks and tricks, feuds and hoaxes.

The book is divided into five partsiron horses and iron men; apprentice years; vanishing types; main line and sidetrack; and blues, ballads, and work songs. A concluding appendix entitled "Railroadiana" brings together much information that heretofore has been scattered and sometimes hard to find. Included are sections on a century of American locomotives and their builders; locomotive naming; passenger train naming; sleeping and parlor car naming; freight train names and nicknames; railroad names and nicknames; fun with initials; railway post office route nicknames; the tangle of gages; the coming of standard time; the official guide; and a century of passenger train coloring.

The railroad historian (Mr. Harlow) and the folklorist (Mr. Botkin) have combined their talents in producing a book that should be popular with all who are interested in railroadiana.

MANUAL OF RECOMMENDED PRACTICE. 2,097 pages; for loose-leaf binding in two volumes. American Railway Engineering Association, 59 East Van Buren st., Chicago 5. Price (including binders): \$12 to A.R.E.A. members; \$20 to railroads and libraries; \$35 to all others. Extra binders, \$4.

Containing all current specifications, plans, designs, forms, definitions and basic principles adopted as recommended practice for railway construction and maintenance, this new and completely revised manual is the written record of approved railway engineering standards developed by more than 100 years of progressive endeavor to meet and solve the problems of constructing and maintaining American railroads. The new manual includes 20 chapters covering findings of committees of the association, plus a 38-page glossary of terms.

This latest edition of the manual is a far cry from the first bound edition issued by the association in 1905. From then until 1936 new editions were published in bound-book form. Separate bound publications, and later the bulletins of the association, constituted supplements to the bound volumes. The first loose-leaf manual, issued in 1936, was reprinted in 1942 and again in 1947. Since 1945 it has been issued in two volumes for greater convenience in use. Loose-leaf supplements have been, and vill continue to be, issued annually, early in the fall, incorporating all action taken at the association's annual meetings in March.

The new manual possesses many features not found in previous editions. Pages have been re-edited to a uni-

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Electric power costs much less and is always available. Extra-rugged construction plus simple design assure long, trouble-free operation and low maintenance.

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Whiting Jack has large size steel base for positive footing. Load carried on powerful 4 inch diameter steel screws (covered). Low unit bearing pressure assures long life of working parts. Self-locking worm gears automatically hold load in case of power failure. Motor equipped with automatic electric brake. Top and bottom limit switches prevent overrun of lifting brackets. Any one or all jacks can be operated remotely with utmost safety.



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form standard and much of the chapter material has been recast as to position, as dictated by various A.R.E.A. committees. Other new features include a new paging system whereby supplemental material can be added in sequence with a minimum use of decimal pages and adjustment and resetting of adjacent material; a detailed table of contents at the beginning of each chapter; and an efficient dating system, whereby the user can readily determine whether or not his manual contains the latest revisions on any particular subject. All material in the book has been re-edited to conform with modern editorial and publishing practice.

In the reprinted manual, each chapter retains the same title and number it held in the past, but has been broken up into basic parts, subparts, sections, subsections, articles and paragraphs. This and all other format revisions are designed to make the material more readily accessible to the

The association has announced that in conjunction with issuance of the new manual, it will soon make available suitable loose-leaf binders for single chapters for those who may want some particular chapter under separate cover.

DIRECTORY OF RAILWAY OFFICIALS & YEAR BOOK, 1953-1954. Compiled from official sources under direction of the editor of Railway Gazette. 530 pages. Tothil Press, Ltd., 33 Tothill St., Westminster, S.W.1, London, England. 40 shillings.

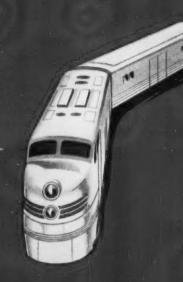
Who is the executive responsible for ordering my products? Where and what is the F. C. de Girardot-Tolima-Huila? What is the gage of the F. C. Nacional General Belgrano? Where can I find statistics relating to individual railways?

These and many other questions are answered by this directory. The format of the volume remains unchanged—all entries being divided into two main divisions, namely, British Commonwealth (regardless of dominion or colonial status) and foreign; each of these sections is again subdivided geographically into continents and countries, Information shown for most entries includes names and addresses of officers, equipment owned, mileage and gage. For larger railroads some historical, general and financial information is also shown.

Once again it has been impossible to secure reliable information from most of the "iron curtain" countries of eastern Europe, but for the first time is has been possible to give extensive details of the personnel and reallocation of lines resulting from reorganization of Indian Railways. New entries include those for Cambodia and Viet Nam. The usual statistical and other year book information, railway chronology, and railway bibliography, are included.

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-both new and modernizednow have efficient **Unizone**or **Moduzone** heating.

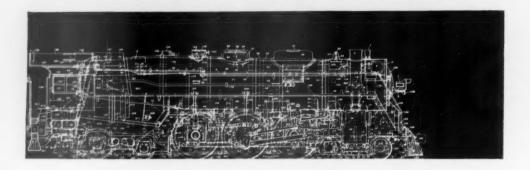




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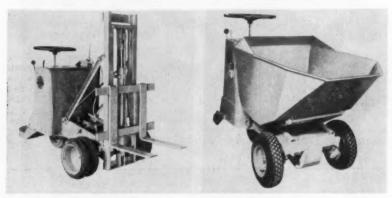


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What's New in Products



THE "MOTO-BUG" fork-lift truck.

THE "MOTO-BUG" power wheelbarrow.

Power Barrow Converts to Truck

Kwik-Mix Company's "Moto-Bug" also has "dead man" internal expanding brake system as safety feature

Improved safety and performance features in the "Moto-Bug," a power wheelbarrow easily converted to a flatbed or fork-lift truck, have been announced by the Kwik-Mix Company, Port Washington, Wis. A new safety feature is the "dead man" internal expanding brake system which instantly stops all machine movement when the operator's foot is off the treadle. This automatic feature affords extra protection against op-



THE FIRST of an improved Dynetric balancing machine, Model 3S, made by the Gisholt Machine Company, Madison, Wis., as it came of the paint rack. The Type S machines

include four floor models, two vertical models and two new bench models. Rotating parts weighing from 4 oz. to 300 lb. are covered by these machines •

erator carelessness and unforeseen accident. The brakes are adjustable.

Power transmission has been improved by use of a cog-type V-belt between the 6-hp. gasoline engine and the drive wheels. Inspection of the V-belt and engine parts has been facilitated by an inspection door in the front panel of the cowl. The rear of the engine is open to permit ready inspection of that side.

À vertical clutch-control lever, with neutral, forward and reverse positions, is set so that it is easily at hand for the operator. The steering gear has been placed 3 ft. 6 in. above the riding platform for greater operator convenience and less work fatigue. Bronze plates have been installed in the clutch assembly to provide smoother starts and longer clutch life.

All hopper and flat-bed models have a single cast body latch hook, complete with adjusting spring, which replaces the two hook latches previously used.

The double wheels on the drive axle of the fork-lift model are now cast in one piece and separate tiers are provided for each wheel for easy inspection and changing. A built-in electric starter is optional •



Surface Temperature Thermometers

Type RdF Stikon thermometers now being made by the Minneapolis-Honeywell Regulator Company, Philadelphia 44, Pa., afford a means of making rapid and accurate measurements of surface temperature within the range of -100 to +400 deg. F. even under extremely restricted space limitations.

The thermometers are designed for use in conjunction with Electronik instruments. They are grids of very fine nickel wire, bonded into wafers of Bakelite or nitrocellulose cement and paper. The size of the wafer may be as small as 3/4 by 5/16 in. and the

More New Products

thickness is not over .006 in. These primary elements are attached to the surface of the øbject, the temperature of which is to be measured, by cement, such as Duco household cement, Epon resin cement or Bakelite cement. Changes in temperature of the object will cause corresponding changes in resistance of the nickel wire, and when the element is connected into the resistance thermometer circuit of the Electronik instrument, the temperature can be read directly on the scale.

These elements can be mounted on any smooth surface, whether plane or not, without drilling, machining or other shaping. Owing to the extremely small mass of the wire, and the very small amount of insulation needed, the speed of response is very high •



Explosion-Proof Motor

For locations where dangerous fumes, inflammable gases, explosive substances or combustible dusts may exist, U. S. Electrical Motors, Inc., Los Angeles, Cal., has announced its new right-angle Syncrogear with explosionproof motor.

Available in 1-hp, rating with speeds from 45 to 153 r.p.m., this 3-phase a.c. motor carries the manufacturer's designation Type SESV-GW. The explosion-proof motor is designed to comply with Underwriters' specifications for Class I — Group D, and Class II—Groups F and G service.

The motor incorporates a cantilever design to protect gear alinement. Mounting stresses are absorbed by the one-piece base, freeing the gear and motor housing of distortion. The design embodies splash lubrication, a hardened and ground worm, normalized castings and asbestos-protected windings •



Two Filament Flashlight

A new type of flashlight which can throw either a concentrated spotlight beam for long range use or a diffused floodlight beam for close range, both controlled by a single switch, has been announced by National Carbon Company, New York 17.

Known as the Eveready No. 7253 Spot-Flood Flashlight, it uses a new Eveready double-filament lamp which is similar in principle to that used in

automobile headlamps.

The lamp also provides an extra margin of safety in that if one of the two filaments burns out, the other is always available.

The light is made with a polyethylene lens-guard, ring-hanger, and heavy-gage seamless brass case, chrome-plated on nickel for lasting finish •



A New Low-Cost Fork Truck Introduced By Baker

The "Yardloader," a new, low-cost gasoline-engine fork truck with a capacity of 4,000 lb., has been announced by the Baker-Raulang Company, 1230 West 80th st., Cleveland 2, Ohio.

The "Yardloader" has a high travel speed, which makes it particularly useful for yard handling jobs requiring movement over large areas. Large pneumatic tires, exceptionally high ground clearance, an extra-heavy drive axle, and an oscillating trailing axle permit its operation over unimproved or semi-improved surfaces, either indoors or out.

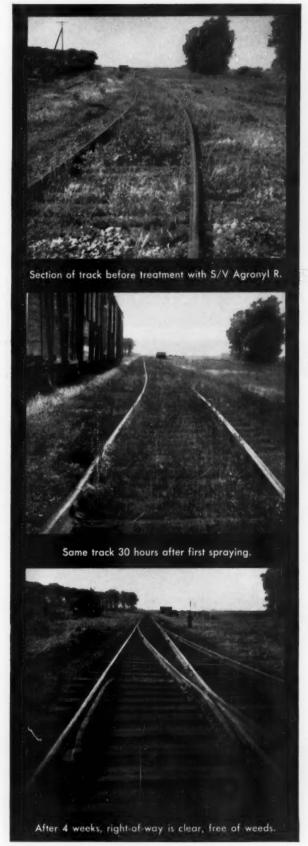
The new truck uses a low-pressure

hydraulic system, with all power from a valve-in-head Case industrial engine. The motor-driven gear pump supplies oil under pressure to either lifting or tilting cylinders, with speed controlled by acceleration of the engine with excess oil by-passed to the reservoir.

cess oil by-passed to the reservoir.

Specifications of the "Yardloader" include: overall length (excluding forks) 100½ in.; overall width 50 in.; wheelbase 55 in.; ground clearance 5 in.; turning clearance 92 in.; lifting height 122 in.; shipping weight 7,000 lb.

The truck is produced in the Minneapolis plant of Baker-Raulang's subsidiary, the Baker-Lull Corporation •



Now! Control Weeds FOR LESS THAN \$15 Per Mile!

S/V Agronyl R destroys all annuals, most grasses, many perennials with first application!

Are you spending more than 15 dollars per mile to control weeds? If you are, you can make substantial savings by using S/V Agronyl R—Socony-Vacuum's new weed killer that was developed as part of a cooperative railroad research project.

This economical weed killer is applied at the rate of about 60 gal. per acre—depending on heaviness of growth. It requires just the usual spraying equipment—can be used straight or emulsified with additives. It has a high flash point—presents minimum fire hazard.

Tests by six leading railroads have proved the effectiveness of S/V Agronyl R. Applied in the spring when weeds are 6" to 8" tall, its killing action starts immediately on contact. Evidence indicates no plant resistance build-up. Except where right-of-way has been badly neglected, S/V Agronyl R destroys all annuals, most grasses, many perennials with the first application!

For full details regarding S/V Agronyl $R-\cos t$, method of application, results — call your Socony-Vacuum representative.

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Socony-Vacuum Oil Co., Inc.



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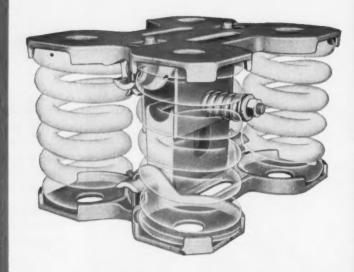
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THE MORE THEY NEED

NEW-CAR SNUB-UP CUSHIONING!

OLD cars carry costly lading tool
Why not cut off damage claims
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Benchmarks

and Yardsticks

IN THE PREFACE to a new edition of his one-volume history of England, originally published twenty years or more ago, Dean W. R. Inge makes an observation to the effect that it's no wonder that capitalism and socialism hate each other so much, because their ideals are identical.

What the dean doubtless had in mind was that adherents to capitalist doctrine do practically all of their discussing and analyzing in terms of material things, the supply of which they are striving to increase. So with the socialists—their controversy with the "capitalists" being, mainly, about the way they propose to distribute economic wealth and income.

There is this distinction, however, which Dean Inge does not mention—namely that the socialists (or, at any rate, the Marxists) deny that there are any effective motives other than the economic; insisting that all institutions — e.g., government and laws—are merely devices to perpetuate the economic advantage of the "ruling classes." There are "capitalists" who act as if they, also, share this opinion, but this belief is not an essential to capitalism.

The Marxian socialists call their doctrine "economic determinism"—i.e., their belief is that the only effective motives are economic and strictly selfish. The capitalists who insist that "every man has his price"; or that "money talks," and is the only thing that does talk—such capitalists are playing right into the socialists' hands by taking over the basic socialist doctrine.

Actually, and in its essentials, capitalism goes no further into motives than to recognize that economic motives—the desire for material gain—do exist and are powerful. Capitalism does not deny that there are other motives, nor does it say that the economic ones are better than the others. Basically, all that capitalism asserts is (1) that economic wants are better supplied when economic activity is left to the free initiative of individuals and (2) that the "motive power" of potential profit (which is a natural result of free initiative) cannot be taken out of the set-up, if it is going to function.

People can be as altruistic as they wish, or as the ecclesiastics can persuade them to be, and genuine capitalism will not object, nor will the doctrines of capitalism be diluted or contradicted.

When Dean Inge or other churchmen quarrel with capitalism because of its alleged "materialism"—thus equating capitalism with socialism—they are, actually, making a sound case against some myopic "capitalists"; but not against the basic tenets of capitalism itself, which recognizes and works with economic motives, but does not make any exalted or exclusive claims in behalf of these motives, as Marxist doctrine does.

J.G.L.



Paying cable out during installation as it is raised up the canyon wall

Even 21 years ago service was paramount on the Santa Fe. Supplying water for the famous El Tovar Hotel of the Santa Fe Railroad required 30 tank cars on a daily 60-mile run. In 1932, the Santa Fe installed a new water system pumping from a spring site down in the Grand Canyon. Electric supply lines for the three 2300-volt electric motors of the pumping station scaled the rocky cliffs to a manhole at the Canyon edge where they were spliced to feeders from the power house.

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1953 — A Solid Foundation 1954 — New Opportunities

On the surface, there was nothing spectacular about 1953. It was a busy year for the railroads, a relatively profitable one, and one which saw new records in efficiency. But, to get at what is really going on-in order to make an educated guess as to the future-requires some subsurface exploration. Such exploration turns up plenty of cheerful

So far as is known, no economist is predicting an increase in the general level of industry and commerce in 1954. A few look forward to another 1953; most see a mild downturn-5 to 10 per centat least during the first half of the year. Most railroad presidents say the same thing about their revenues. They are being conservative-basing their calculations on the railroads' getting no higher a percentage of the nation's total traffic in 1954 than in 1953, which isn't necessarily what

is going to happen.

Even with a 10 per cent decline in traffic, though, gross revenues of the railroads should run close to \$10 billion in 1954. The net income which would be produced therefrom is problematical. Foremost on the dark side are the demands of the railroad unions for their pound of flesh-made since the moratorium on present wage payments ended on October 1, 1953. The speedy agreement with the Trainmen, signed on December 17, is not necessarily the pattern which the other unions will accept. Interunion rivalry probably has never been so bitter as it is today, and leaders fighting for members tend to insist upon spectacular settle-

On the favorable side is the recent growth in the ability of railroad management to carry more gross through to net. This was shown in 1953. This was accomplished largely by plant improvement, the cumulative effect of which should not only continue but increase these savings in the future. Another is the demonstrated ability of modern management to control expenditures closely through budgeting and to take action faster than was formerly the case. A number of security analysts have commented on the ability of individual roads to make fast and deep cuts in expenses-including those related to transportation -during the 40-day steel strike of 1952.

Today, few railroad managements believe they can afford not to modernize their plant, up to the absolute limit of their ability to spend or borrow money. The actions of most roads over the nine years since the end of World War II prove it. Compared with previous periods, the improvement programs of the railroads in the last decade have, overall, been extraordinarily high-even when the higher price level is taken into account.

The steps which put an average of \$1 billion a year into new plant during each one of those postwar years were taken in the face of the fact that investors' money put into railroads yields a return, on the average, only half as great as that put into utilities and only a third as much as that invested in manufacturing enterprises. Even in 1953, the rate of return on invested capital in the railroad business was only 4.23 per cent. In 1946 it went as low as 2.75 per cent.

The chief executives of most roads, therefore, have had to decide to make these high "investments in the future," in the face of earnings which were low, as most businesses go in this country, and often at the expense of dividends for their owners. That they decided to spend the money is proof that they expected a high rate of return from the tools that money purchased-largely in

savings in labor and materials.

Their expectations proved correct. The savings in operating expenses alone from modern tools, such as diesels, centralized traffic control, and retarder yards, more often than not have proved even greater than was anticipated. This happy outcome was due in part, obviously, to the fact that since the investments were made the wageprice spiral has climbed higher; every replacement of an existing facility by a new one which consumes proportionately fewer man-hours and less material has proved increasingly profitable as inflation proceeds.

"Cussin' and Praying"

In olden days when the general level of business fell off, railroad managements could take two kinds of steps: (1) Increase traffic by diverting it from rival roads through rate cuts, new route combinations or dramatically superior service; or (2) Decrease expenses by running fewer trains and slashing payrolls. Step (2) was resorted to more than (1). This process was described by James C. Clarke, president of the Illinois Central during the eighties, as "pinching, long hours, short grub time, some cussin' and a fair amount of persuasion and praying."

Today, faced at the very least with a probable "rollover readjustment" in the general economy, railroad management is effectively barred from saving on labor costs by the old-fashioned measures of "pinching, long hours and short grub time." It wouldn't and couldn't use strong language to employees, though it still possesses the constitutional right to do "some cussin'" in private. The fact is that there is only one means of expensecutting yet open to Mr. Clarke's present-day successors-namely, that of buying the tools with which to reduce operating expenses.

Investment in Futures

The following prediction is safe: In 1954 the railroads will spend as much money on new and improved equipment and facilities as they can afford. The money may not be spent in quite the same amount as in previous years, but, to the extent they are able, the railroads will go "all out." If anything is lacking, it will be neither the opportunities for savings-type investments nor the desire to take advantage of them; it will be the

Now that diesels are performing roughly three-quarters of the service produced by the railroads, it is being said that buying of new units will decline precipitously. But account must be taken of the following:

(1) The benefits of complete dieselization are so great that more than a few roads will seek to complete the changeover in motive power as

rapidly as resources permit.

(2) The ratio of new diesel units required to replace retired steam power is increasing, as the proportion of potential high-utilization assignments diminishes. In 1952, the biggest year for steam locomotive retirements in history, the apparent rate of replacement was one new diesel for every two steam locomotives. In now appears that in 1953 this ratio will have been greatly

(3) Of increasing importance in determining the level of new orders for diesels is the necessity for replacing older diesel units. It is significant that 401 diesel units were reported as having been retired during the first ten months of 1953.

Despite the fact that the railroads achieved a net gain of about 25,000 freight cars during 1953, they will have to do large-scale purchasing to carry out their three-year old pledge of 1,850,-000 serviceable cars on hand by the end of 1954, which remains the announced goal of the members of the Association of American Railroads. Since the fleet is now 75,000 cars short of this goal, to attain that ownership the lines would have to buy an average of 11,000 new cars a month (allowing for retirements) during 1954.

The trouble with too many discussions about the railroads' future is that they put the industry in a vacuum; tend to cement traditional factors of analysis into rigid formulas. They forget that-

to quote the New York Central's William White-"There is a dynamic quality about the railroad industry." This dynamism takes the form, not only of new opportunities for gross business, but also of new ways to make profits out of what already moves.

One of the most important physical programs now under way on a number of important roads is long-range yard modernization. Resulting from an orderly strategy, based on modern statistical methods, these programs are not just hit-or-miss, yard-by-yard schemes which attract attention because they move a lot of dirt around. Although increased capacity is one aim, chief emphasis is on cost-savings. Instead of the old striving for bigger car-holding capacity, these modern yard programs stress speed of transit, minimum car detention, reduction of switching moves, and concentration of major system classification work at fewer well-equipped facilities. The annual savings are enormous. The Southern, for example, cites savings up to 80 per cent a year on investment in one of its yard programs. Another big road looks for a 33 per cent return on a key yard now being rebuilt.

Cars and Good Management

It is a good deal cheaper to increase the supply of freight cars by increasing their use than by adding to the fleet. Furthermore, increased utilization may make more justifiable the purchase of the better-equipped, more expensive cars which shippers are demanding. John E. Kusik, vice-president-finance of the C&O, says that freight cars are comparable to industrial inventories; that industry makes money by turning over inventories; and that railroads make money by turning around cars. He is not impressed with the record: "Ten billion dollars worth of freight car equipment standing still of per cent of the time in a business of movement. I suggest this is no way to serve our customers-or to make money."

Along this line of inquiry, an increasing number of railroad officers are seeking supplements to the currently most popular methods of measuring operating performance—the transportation ratio and the indices of locomotive and/or train output related to time and to distance. They point out that neither the ratio nor the operating indices take into account the cost of owning or

Development of a more complete and realistic set of measurements of unit performance on the railroads is an attainable, if difficult, goal. The result would be the opening up of new fields of profit, especially if the present successful emphasis upon locomotive output is matched by equal attention to car use, and if the traditional practice of equating output and cost against miles

were tied in with the equally important concept of relating them to time factors.

The central fact about the railroads as they face a new year is that their relative role in the economy has been shrinking. Their freight business-even their passenger traffic-is well above pre-World War II levels, but they are hauling progressively smaller percentages of the country's total freight and passenger traffic and their revenues account for a constantly shrinking share of the national income. This fact is true only of the industry as a whole, of course; individual properties have shown growths comparable to other businesses, and the share of total rail business among individual roads has changed substantially. Nevertheless, no railroad man can ignore this constant attrition of position of his industry, even though his own company's stock may be at record highs and its dividend payments generous.

In the freight field at least, however, "natural losses" account for only a part of the whole. Probably \$3 billion worth annually of revenue now being lost by the railroads represents revenue on freight to which railroads have a claim on the basis of overall cost, but which is moving by truck, either because of real of fancied service superiority or lower rates, or both.

The mass-mover railroad can never profitably be made as flexible as the single unit truck. But many railroad officers insist that, on longer hauls, properly operated railroads can overcome their greater terminal time-loss with higher sustained road-haul speeds—provided the intermediate handling problem can be licked. Perhaps the most crying service need of the railroads is to provide better connections on interline movements. Here is where delays are worst and where the weakest link in the chain brings disrepute to the whole industry.

A Place for Service

Speed is not the whole of "service." Reliability is more important to many shippers. Railroads would appear to have a potential natural superiority in this regard, which needs only more emphatic cultivation to make it salable. The quality of equipment furnished affects the service factor heavily. Cars which will protect a shipper's lading and, at the same time, cut his costs of packaging and stowing will attract business back to the rails.

That the trucks can capture from the railroads progressively larger amounts of traffic is due largely to the fact that the railroads' rate structure continues to be based on an outmoded, monopolytype theory of charging. It worked well in its day, as long as the railroads had, in fact, a practical monopoly, and for the most part satisfied both the railroads and the public. It became sanctified

by traditional railroad practice and by regulatory precedent. But it was outmoded when a flexible competitor like the truck offered to move freight at cost-plus-profit, without regard to the stately railroad rate structure; and without regard to the value of the commodities being hauled.

There is a growing belief in the railroad industry that, even within the present restrictions of regulation, the railroads can (or, at least, should try to) do more than they have to flex the mold of rates to their advantage. Some outspoken executives would have more emphasis in railroad ratemaking placed on relative truck costs, with distance scales shaped to exploit all situations where the railroads have cost advantage, and to price away traffic where they do not. In one area intensive studies are going on to find out what rates are needed to assure to the railroads all the traffic to which they have a sound economic claim.

One of the hardy perennials, l.c.l., is getting a new look these days from at least two trunk lines. This interest in l.c.l., it is understood, is based largely on a completely new concept of rates, rather than on revolutionary service charges. There is more than one railroad which expects to increase earnings from l.c.l. traffic in 1954.

Whether an important avenue of traffic development lies in the much-discussed "piggyback" operation remains to be seen. There is nothing to keep railroads from using trailers-on-flats for their own l.c.l., and a sizable number of lines are now doing it. There may exist an opportunity for the railroads to provide their own trailers for carlot freight as well, although off-track movement of this kind might encounter regulatory trouble.

The real question is whether the railroads are going into the wholesale movement of highway trailers containing freight controlled by the truckers and moving at truck rates. It is likely that at least several roads will come forth with important announcements about piggyback services in the near future. One of the possible arrangements may involve pooling between competing rail routesan important experiment in the direction of solving one of the big problems about wholesale piggyback; namely, how to divide traffic among multiple routes when there isn't enough to go around. The railroads must, of course, move trailer traffic at speeds which give overall transit time comparable to that over the highway and at rates which will be low enough to attract the trucker off the roads.

The dynamic railroad industry has greater opportunities than ever before. A growing nation, which is consuming the highest amount of transportation, per head, in history, needs the orderly mass transportation of the railroads more than it ever did. To grasp those opportunities, "some cussin' and a fair amount of persuasion and praying" will undoubtedly prove useful.

RAILWAY OPERATIONS in 1953 in J. ELMER MONROE

Vice-President and Director Bureau of Railway Economics Association of American Railroads

TERMINATION OF HOSTILITIES in Korea overshadowed all other developments in 1953. After three years of bitter warfare, a truce was signed at Panmunjom, on July 27. The American people rejoiced in that welcomed turn of events, although realizing that the basic differences between communism and democracy remain a threat to national security. That realization, and the national policies which flow from it, will have considerable bearing on future levels of economic activity in the United States.

Geared to the needs of military operations in Korea and to requirements of the nation's long-range mobilization program, the national economy functioned at peak levels in 1953. New all-time highs were recorded for the year as a whole in a number of sectors of the economy, including civilian employment and industrial payrolls, gross national product and national income, steel production, electric power output, and many other important lines of business activity. No major strikes disrupted industrial operations during the year.

THE YEAR IN BRIEF

Briefly summarized, changes in the principal traffic and income account items of Class I railways, 1953 compared with 1952, as reflected by actual returns for the first ten months of 1953 and estimates for the last two months, were as follows:

1. Freight ton-miles were off about one per cent and passenger-miles declined by about 7

per cent.

2. Operating revenues reached a new alltime high, about one and one-half per cent above the previous high recorded in 1952. The fact that full Ex Parte 175 freight rate increases were in effect for the entire year 1953, but only the last 8 months of 1952, accounted for the increase in revenues.

3. Operating expenses also reached a new high, approximately one-half of one per cent above 1952. Slightly higher wage rates and material prices were responsible for the increase.

- 4. Kailway tax accruals increased by about three per cent, notwithstanding additional income tax deferrals of about \$45 million resulting from further authorizations for accelerated amortization of defense projects. Had it not been for these increased income tax deferrals, the dollar increase in expenses and taxes would very nearly have equaled the dollar increase in revenues.
- 5. Net railway operating income in 1953 approximated \$1,125 million, an increase of \$47 million over 1952. The rate of return earned on average net property investment for the year was 4.23 per cent, compared with 4.16 per cent in 1952.
- 6. Net income after charges in 1953 approximated \$900 million, compared with \$825 million in the preceding year.

Tempering the significance of these record-breaking accomplishments for the year as a whole, however, was the downturn in business trends which developed following the truce in Korea. The declines from the peaks established during the first seven months of the year have been moderate and have proceeded in an orderly way. Many indicators point to a continuation of these moderate and orderly declines until the period of adjustment has run its course. On the other hand, a degree of uncertainty attaches to any period of economic adjustment, however narrow in scope it may appear to be at the outset. It was on such a note of uncertainty that the year 1953 came to an end and the year 1954 opened.

ECONOMIC ADJUSTMENTS UNDER WAY

ailroad operations in 1953 reflected, to a considerable degree, developments during the year in the national economy. Freight traffic showed a moderate increase during the first eight months of the year, but this gain was virtually wiped out in the final months. Passenger traffic declined, sharply in the first half of the year, more moderately in the second. Net earnings increased in each of the first seven months of 1953, but recorded decreases in each of its last five months. For the year as a whole, net railway operating income showed an increase of about 4 per cent over 1952, and net income increased by about 9

per cent.

While there were no major changes in freight rates during 1953, the year was not without developments in that field. Most important was denial by the Interstate Commerce Commission, on July 29, of the rail carriers' petition for authority to make permanent the increases in freight rates and charges previously authorized in Ex Parte 175. Those increases, in the form of surcharges to freight bills, were due to expire on February 28, 1954. In its order, the commission did, however, extend the expiration date to December 31, 1955.

In passenger-train service, the commission, in April, approved an increase in basic passenger fares of 10 per cent for a group of Southwestern railroads and in July authorized an increase of 15 per cent in express rates. An understanding between the postmaster general and the railroads, subject to commission approval at hearings scheduled for January 6, 1954, will increase mail pay rates by 10 per cent retroactive to October 1, 1953.

There were a number of adjustments in railroad wage rates during the year, some up and some down. The net result of these changes was an average wage rate in 1953 about 4 cents per hour higher than in 1952. The most important development in this field, however, was the filing of demands for either new wage increases or "fringe benefits" or both by all railroad labor organizations. As later developed in some detail, these demands aggregate staggering sums, and coming at a time when current railroad traffic and earnings' trends are down, pose a serious problem to the railroad industry. The demands of the Brotherhood of Railroad Trainmen were settled on December 16. At the year's end, demands of the other organizations were in various stages of the collective bargaining procedure prescribed in the Railway Labor Act. Until these important matters involving 63 per cent of railroad operating expenses are resolved, it is difficult to foresee what 1954 may hold for the railroads in the way of financial results.

No legislation of major importance to the railroads was enacted in 1953. However, important measures which the railroads advocate and others which they oppose received active consideration during the first session of the 83rd Congress. A number of these measures will undoubtedly be further considered in the course of the

second session.

Prominent among the measures supported by the railroad industry is the so-called "Time-Lag" bill which would speed up the process of adjusting rates following the impact of increased wage and other costs. The railroads also advocate repeal of the excise taxes on amounts paid for transportation (15 per cent on passenger tickets and 3 per cent on freight charges). Additionally, the railroads have proposed a number of revisions of the Internal Revenue Code designed to eliminate inequities.

Measures to which the railroads are opposed and which may be actively considered during the second session of the 83rd Congress include bills which would prevent effective regulation of motor-carrier trip leasing practices, would provide for construction of the St. Lawrence Waterway, would extend the regulatory authority of the Interstate Commerce Commission with respect to operating rules and facilities, and would revise and make more restrictive the present provisions of the Hours of Service Act.

While the year 1953 was on the whole a fairly good one for the railroads, it ended on a disquieting note. Down trends in general business activity, unsettled wage demands, and continued inroads of competitive agencies of transport into railroad traffic make the outlook for 1954 uncertain. On the other hand, expenditures since the end of World War II of more than \$9 billion for capital improvements having greatly strengthened the railroad physical plant, the carriers entered 1954 at peak levels of operating efficiency and economy.

LITTLE CHANGE IN TRAFFIC TRENDS

tatistical entries appearing in this review relate to line-haul railways of Class I and were obtained from reports of the Interstate Commerce Commission or tabulations of the Association of American Railroads. At the time of preparation of this review, actual data were available only for the first 9 or 10 months of 1953. Therefore, all entries for the year 1953 in the statistical tables which follow are partially estimated. In some cases, such as the detailed financial results and performance averages, it is impracticable at this time to make estimates for the year as a whole. In those instances, the periods covered by the statistics are indicated in the table headings. However, estimates for the year as a whole for some of the more important income account items appear in the textual discussion.

Table 1 shows statistics of railroad freight and passenger traffic volumes over the past 10 years, 1944 to 1953. As there indicated, freight traffic in 1953 showed only a minor change from the preceding year. Expressed in terms of carloadings, freight volume increased in 1953 by about one per cent. Freight ton-miles, on the other hand, decreased by about one per cent due to reductions in average length of haul and in average load per car. Passenger traffic declined in every month but one of 1953, and for the year was approximately 7 per cent below 1952.

Carloadings of revenue freight increased from 37,985,000 in 1952, to 38,303,000 in 1953, that is, by 0.8 per cent. Loadings in 1953 were thus the third lowest experienced in the postwar period, being 6,200,000 cars fewer than the high year, 1947, but 2,400,000 cars more than in 1949, when postwar traffic was at its lowest point.

Of the eight carloading groups, three showed increases—ore, coke, and miscellaneous. Forest products, coal, grain, l. c. l., and live stock all registered declines. Loadings of ore, which increased by 18.6 per cent, were the greatest on record, the aggregate of 3,146,000 being

Table 1—Comparative Traffic Summary

1744-1		Revenue carloadings	Revenue ton-miles	Revenue passenger-miles
Year		(thousands)	(millions)	(millions)
1253*	*******************	38,303	610,000	31,700
1952		37,985	614,754	34,010
1951	***************************************	40,499	646,620	34,614
1950	***************************************	38,903	588,578	31,760
1949	**** -	35,911	526,500	35,095
1948	A0000000000000000000000000000000000000	42,719	637,917	41,179
1947		44,502	654,728	45,921
1946	*******************************	41,341	591,982	64,673
1945	***************************************	41,918	681,001	91,717
1944	*************************	43,408	737,246	95,549
*Pai	rtially estimated			

about 130,000 cars greater than the number loaded in 1942, the previous record year. The greatest relative decline took place in loadings of live stock (8.1 per cent). Loadings of l. c. l. declined 5.1 per cent, while grain and coal declined by 4.2 per cent and 5.0 per cent, respectively, as compared with 1952.

Table 2—Carloadings by Commodity Groups

(1755 48. 1752)		Incred	ase (1)	or Deci	reas	e (D)
		con	npared	with	195	2
	1953	Nu	mber			
Commodity Group	(000)	((000		per	cent
Ore	3,146	- 1	492		1	18.6
Coke	693	1	20		1	3.0
Miscellaneous	19,407	1	483		1	2.6
Forest Products	2,260	D	10		D	0.5
Grain	2,458	D	107		D	4.2
Merchandise, L.C.L	3,504	D	187		D	5.1
Coal	6,383	D	334		D	5.0
Live Stock	452	D	40		D	8.1
Total	38,303	Ī	318			0.8

Ton-miles of revenue freight aggregated 610 billion in 1953, a decrease of about 5 billion ton-miles or 0.8 per cent below 1952. In the seven preceding postwar years (1946-1952), ton-miles averaged 609 billion per year. Thus, in terms of ton-miles, 1953 was only slightly better than an average postwar year.

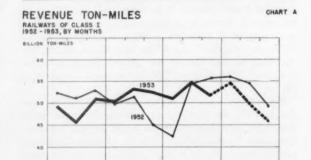


Chart A shows the monthly trends in ton-miles during the years 1952 and 1953. As there indicated, ton-miles in 1953 fell below those of 1952 in each of the first 3 months, showed increases in each of the next 5 months, and declined in each of the last 4 months. The dotted lines on the chart, for the last 3 months of 1953, represent estimates based on trends in carloadings. The wide spread in ton-miles in the months of June and July of the two years was due, of course, to the 55-day strike in the steel industry in 1952. Curtailed government spending, and the reduction in long haul military traffic to the West Coast following the Korean truce, played important roles in the traffic decline experienced in the last quarter.

Revenue passenger-miles declined for the second consecutive year, the 1953 aggregate being about 7 per cent below the total for 1952. The trend in the first 6 months was downward, averaging 8.5 per cent below the corresponding total for 1952. During the last half of the year, however, passenger traffic became more stable, showing a reduction of about 5 per cent under the last 6 months of 1952. Passenger-miles for the year 1953 totaled about 31.7 billion, compared with 34.0 billion in 1952.

Chart B shows the trends by months in passenger-miles during the years 1952 and 1953. The dotted line for the last 3 months of 1953 represents estimates. The narrowed spread between the lines in the last halves of the two years is obvious.

FINANCIAL RESULTS SHOWED IMPROVEMENT

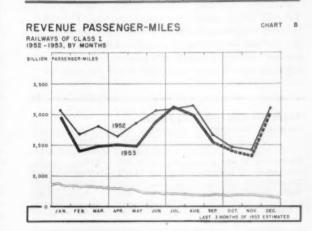
espite the fact that both freight and passenger traffic (expressed in terms of ton-miles and passenger-miles) declined in 1953, financial results of Class I railways showed improvement. The improvement was due in part to the 6.8 per cent increase in freight rates which went into effect in May 1952. Thus, while 1952 earnings were benefited by the increase in the last eight months of the year only, 1953 earnings reflected the effects of the higher rates during the full calendar year. Another factor in the improved shewing was the increase of some \$45 million in income tax deferrals arising from amortization of defense projects.

For the first ten months of the year, operating revenues aggregated \$9,017 million, a new record for the period. Operating expenses were also at an all-time high. As a result of improved earnings, taxable income maintained a relatively high level, reflected in taxes which were greater than in any comparable period in the eight postwar years.

Net railway operating income and net income after charges were both greater in the ten-month period of 1953 than in the corresponding period of the previous

Financial results of Class I railway operations for the first ten months of 1953 are set out in Tables 3 through 5. For comparative purposes, like periods for the years 1952 and 1951 are also shown.

Table 3 shows the principal items of the income account. Comparing the first ten months of 1953 with



the corresponding period of 1952, operating revenues were up 3.2 per cent; operating expenses increased 1.5 per cent; net railway operating income increased 11.2 per cent; and net income was up 17.5 per cent. The tax rise of 3.6 per cent was due almost entirely to an increase in federal income taxes.

Table 3—Condensed Income Account

igii mollilis, 1751-1755			
	1953	1952	1951
	(millions)	(millions)	(millions)
Total operating revenues	\$9,017	\$8,739	\$8,586
Total operating expenses	6,781	6,681	6,700
Operating ratio (per cent)	75.2	76.5	78.0
Taxes	\$1,085	\$1,048	\$ 984
Net railway operating income	953	857	733
Net Income after charges	740	630	496

Table 4—Operating Revenues
Ten Months, 1951-1953

1953	1952	1951
\$7,588	\$7,258	\$7,203
706	757	740
250	256	209
109	108	66
364	360	368
\$9,017	\$8,739	\$8,586
	\$7,588 706 250 109 364	\$7,588 \$7,258 706 757 250 256 109 108 364 360

Table 4 shows the principal items of operating revenue. Three of the five accounts increased, 1953 over 1952, while two showed decreases. Freight revenue increased over 1952 by 4.5 per cent, the composite effect of virtually the same traffic volume, on the one hand, and increased rates effective throughout the year, on the other. Passenger revenue declined by 6.8 per cent.

Mail revenue declined by 2.4 ver cent while express revenue remained substantially the same, increasing by 0.8 per cent. All other revenues was greater by 1.3 per cent.

Principal operating expense accounts are shown in Table 5. Of the principal expense accounts, the two relating to maintenance showed modest increases in 1953-4.3 per cent in the case of maintenance of way, and 1.9 per cent for maintenance of equipment. Transportation expenses were less by one-tenth of one per cent.

Table 5—Operating Expenses

Ten	Months,	1951	-1953

	1953 (millions)	1952 (millions)	1951 (millions)
Maintenance of way		\$1,268	\$1,246
Maintenance of equipment		1,620	1,630
Transportation	3,233	3,237	3,291
Traffic, general, and other	574	556	533
Total	\$6,781	\$6,681	\$6,700

Table 6 shows for each year of the latest ten-year period the net railway operating income and rate of return earned on average net investment. Net railway operating income exceeded one billion dollars in five of the ten years shown, the net operating income being estimated at \$1,125 million for 1953. Also, in five of the ten years (including 1953) the rate of return was 4 per cent or more; in the other five years, it was less than 4 per cent, being less than three per cent in 1946 and

The weighted average rate of return for the ten years included in Table 6, 1944 to 1953, was 3.84 per centa This return is inadequate by any reasonable standard of measurement. It falls far short of adequacy under conditions of near top production levels and general prosperity which now prevail.

The railroads are under obligation constantly to improve their plant, order more rolling stock and step up the efficiency and economy of their operations. To accomplish these ends their net earnings should be adequate to attract the new capital needed to finance a substantial proportion of the heavy expenditures so necessary to the success of the improvement program.

Chart C shows the net railway operating income, by months, for 1952 and 1953.

Another measure of relative net earnings is the ratio

Table 6-Rate of Return

1944	1953		
		Net railway	Rate of return on investment after
Year		(millions)	depreciation a
1953	(est.)	. \$1,125	4.23%
1952	***************************************	1,078	4.16
1951	*****	. 943	3.76
1950	***************************************	. 1,040	4.28
1949	4477	. 686	2.88
1948	*****	. 1,002	4.31
1947	***************************************	. 781	3.44
1946	***************************************	. 620	2.75
1945	***************************************	852	3.70
		1.104	470

a "Rate of return" is computed on average property investment of the carriers, including investment in road and equipment, material and supplies, and cash, and after deducting accrued depreciation, at the beginning and end of the year.

NET RAILWAY OPERATING INCOME



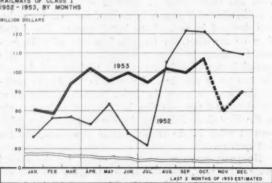


CHART C

of such earnings to total revenues. That ratio is frequently expressed in terms of cents remaining for net railway operating income out of each dollar of gross revenues. During the 20 years prior to World War II, it averaged 15.7 cents per dollar of gross, and ranged between a low of 10.4 cents per dollar in 1932, and a high of 19.9 cents per dollar in 1929. This peak of 19.9 cents was again attained in 1942, a war year, but from that point the ratio decreased to 8.0 cents in 1949 (an all-time low). For the past four years the ratio has fluctuated around the 10-cent level.

RAILROAD REORGANIZATIONS MARK TIME

uring 1953, one Class I railroad was discharged from bankruptey. By order of the New Jersey Federal District Court on June

3, sixteen years of trusteeship were terminated for the New York, Susquehanna & Western, As a result of this action, the total number of railroads in the hands of the courts at year end was reduced to 39, of which 11 were railways of Class I.

The Missouri Pacific reorganization proceedings encompass six of the 11 Class I railroads in receivership or trusteeship. In May, the U. S. District Court in St. Louis denied the debtor company's petition for leave to file a plan of reorganization under Section 20b of the Interstate Commerce Act (Mahaffie Act). Thereafter, in June, the Interstate Commerce Commission held a hearing pursuant to provisions of Section 208 of the Bankruptcy Act for the purpose of determining whether changed conditions since certification to the court of the commission's 1949 plan of reorganization call for modification of that plan.

Plans of reorganization offered in evidence by various parties as modifications of the commission plan provided, without exception, for recognition of presently outstanding Missouri Pacific preferred and common stock interests. With the exception of the modified plan of the independent directors of Missouri Pacific, all provided for merging the properties of the several debtors into a single company. The modified plan of the independent

directors proposed separate reorganizations of the principal debtors, preservation of the existing system by continuance of intercorporate relationships of the present character, and implementation of Section 208 provisions relative to the use of surplus cash for retirement of debt at a discount through substantial sinking funds provided for that purpose. At year end, the examiner's proposed report with respect to the issues raised by the Section 208 proceedings had not been issued.

In the Florida East Coast reorganization, the 5th Circuit Court reversed, on a split 3 to 2 decision handed down January 19, the district court's disapproval of the Interstate Commerce Commission's plan providing for merger of the debtor's properties with those of the Atlantic Coast Line. A petition for writ of certiorari was filed March 21 by the St. Joe Paper Company and on May 4 the Supreme Court agreed to review the single question of whether the commission with court approval and confirmation may, on a finding of public interest, require merger of the debtor's property over the objection of holders of a majority amount of a large class of bonds having a lien on most of the debtor's property. Argument was held on October 15. At year's end no decision had been announced.

With the exception of the preferred stock, all classes of Wisconsin Central securities voted acceptance of the revised Interstate Commerce Commission plan for reorganization of that road promulgated March 17, 1952, and approved by the district court in Minneapolis in 1953. The approval of the district court was, however, appealed by the debtor company in August. A preferred stockholder's committee also joined in this appeal, and argument before the 8th Circuit Court was held December 8.

The commission, on October 29, permitted a group of refunding mortgage 4 per cent bondholders to file a new plan of reorganization for the New York, Ontario & Western which would provide that the Kingston & Port Jervis be operated separately.

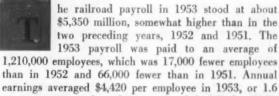
In the Long Island Rail Road proceedings, the commission authorized the withdrawal of the Long Island Transit Authority's plan. The effect of this action was to leave the Pennsylvania Railroad's proposed plan of 1951 (as amended November 4, 1953) as the only submission by the parties at the hearings concluded December 18, 1953. At year end, briefs preliminary to the examiner's proposed report were due to be filed February 20, 1954.

During the year, no important developments occurred in the case of the Georgia & Florida, the lone Class I railroad in receivership.

In the three cases of large railroads seeking to modify their capital structures voluntarily under Sec. 20b (Mahaffie Act) of the Interstate Commerce Act, the commission took the following actions: Closed the Boston & Maine proceedings by ruling on April 21 that stockholder assents had been lawfully procured in January 1951 and in the required number to place the 1950 stock modification plan in effect; held hearings in May on a Western Maryland recapitalization plan designed to eliminate dividend arrearages on the 7 per cent cumulative first preferred stock; held hearings on the Missouri-Kansas-Texas proposal to issue new stock so as to wipe out arrearages on that road's present cumulative preferred stock.

In reorganization proceedings involving smaller railroads, the commission approved a plan of reorganization for the New Jersey & New York whereby the Erie would acquire all of the debtor's properties and assets except certain special reserve accounts. A second proposed examiner's report suggested merger of the Boston & Providence with the New Haven, which has been operating B&P properties since 1893.

EMPLOYMENT DOWN BUT



earnings averaged \$4,420 per employee in 1953, or 1.6 per cent greater than the average of \$4,352 for 1952. The 1953 average was 62.1 per cent higher than the 1944 wartime peak of \$2,726, and nearly two and one-third times the prewar average of \$1,913 in 1940.

Average straight time rate of pay of railroad employees stood at \$1.88 per hour in 1953, or 2.2 per cent above the 1952 average. It was more than twice as great as the 1944 rate, and more than two and one-half times the 1940 prewar rate.

Table 7 shows the average number of railroad employees, the total payroll, average annual earnings per employee, and average straight time rates of pay and earnings per hour for the years 1940, and 1944 through 1953.

Wage agreements in effect in 1953 for most railroad employees were entered into in 1951 and 1952. Those agreements, among other things, contained provisions for a quarterly automatic cost-of-living wage adjustment commencing April 1, 1951. During the last quarter of 1953, the cost-of-living wage increases in effect amounted to 13 cents per hour.

The agreements also contained provisions prohibiting the initiation prior to October 1, 1953, of further proposals for changes in rates of pay. This clause was subject to a so-called "reopening" provision to the effect that if government wage stabilization policies permitted so-called annual improvement or productivity wage in-

Table 7—Employees and Their Compensation

I WINTE	- Limpio	yous amu	I IIICII CO	mpensu	61011
	Average number of	Total A	verage annua earnings of		ge straight e hourly
Year	employees	(millions)	employees	Rate	Earnings
1953*	1,210,000	\$5,350	\$4,420	\$1.88	\$1.97
19520	1,226,663	5,338	4,352	1.84	1.94
19510	1,276,000	5,336	4,182	1.76	1.84
1950a	1,220,784	4,621	3,785	1.58	1.65
1949	1,191,444	4,419	3,709	1.44	1.51
1948	1,326,906	4,769	3,594	1.31	1.37
1947	1,351,961	4,350	3,218	1.17	1.22
1946	1,358,838	4,170	3,069	1.12	1.16
1945	1,420,266	3,860	2,718	0.93	0.97
1944	1,413,672	3,853	2,726	0.93	0.97
1940	1,026,956	1,964	1,913	0.74	0.77
*Porti	alv astimated	@ Includes	retroactive	wage Incr	eases

creases, the parties might meet with the President of the United States, or his designee, on or after July 1, 1952, to consider the justification of further wage adjustments. Acting under this clause, the railroad labor organizations demanded an upward adjustment in wage rates. On December 1, 1952, the President appointed Professor Paul N. Guthrie of the University of North Carolina as his designee to serve as referee in the dispute.

The Guthrie Award. Mr. Guthrie scheduled hearings in New York to consider whether or not further wage increases were justified under the "reopening" clause in railroad labor contracts. Formal hearings commenced on January 6, and continued until January 23, 1953. The award of the referee was issued on March 18, 1953. He found "that further wage increases are justified" and awarded an increase of 4 cents per hour, retroactive to December 1, 1952. In connection with the question of annual improvement or productivity increases, the referee stated:

". . . it is unnecessary to reach any conclusions with respect to whether a wage plan providing for annual improvement increases is desirable, or whether such a plan is preferable to a more informal recognition of the productivity concept. The parties involved in this case are able and experienced in the techniques and arts of collective bargaining. That is the proper forum in which they should decide when, how and if they wish to recognize productivity in relation to wage adjustments in a longer time perspective. The decision in the instant case arises out of a particular set of circumstances and facts and within a particular time span, and it does not pretend to pass judgment on how the parties should deal with the productivity issue in relation to wages in the future."

Cost-of-Living Increases

Escalation Provisions. The cost-of-living escalation clause in the wage agreements entered into in 1951 and 1952 provided for adjustments of one cent per hour, upward or downward, for each one point change in the Consumer's Price Index (old series) compiled and published by the U. S. Bureau of Labor Statistics. With the discontinuance of the old series index in June 1953, the parties requested the commissioner of labor statistics to furnish the equivalent brackets under the revised index which would correspond to the brackets of the old series. The commissioner, replying on August 25, 1953, pointed out that "the key to the problem is the choice of the month of conversion" and "in the absence of a prior agreement on this point . . . we in the bureau are not in a position to make that interpretation."

On September 16, 1953, representatives of the labor organizations and the railroads met further to consider the matter. That meeting culminated in an agreement providing that the quarterly cost-of-living allowance beginning October 1, 1953, would be one cent for each sixtenths of a point change in the revised Consumer Price Index. The index of 178.0, the base from which the cost-of-living allowance was measured in the old series, was revised to a new base of 107.0 for purposes of measuring the quarterly adjustment.

Carmen. At the beginning of 1953, the railroads had before them a long-standing request from the Brother-hood of Railway Carmen to increase the rates of pay of freight carmen to the same level as that paid passenger carmen. Finally, on June 4, 1953, agreement in settlement of the dispute was consummated. It provided for

an increase of 4 cents per hour in the rates of pay of freight carmen, thereby reducing the differential between the rates of passenger and freight carmen from 8.4 cents to 4.4 cents per kour. The agreement also provided rules in regard to the employment and upgrading of apprentices in these occupations.

BROTHERHOODS PRESS FOR WAGE INCREASES

on-operating Employees. As the 1951 agreement with railroad non-operating employees did not provide for a moratorium on rules changes as did the agreements with the operating unions, the non-operating organizations filed demands on May 22, 1953, for longer vacations, double pay for working on holidays in addition to the regular pay for such holidays, health and welfare benefits, extra pay for Sunday work, and liberalized free transportation privileges. The carriers filed proposals for changes in a number of rules for the purpose of relaxing restrictive and make-work practices.

Conferences between representatives of the non-operating organizations and railroad committees commenced in Chicago on November 3, 1953, at which time the carriers reiterated their position, taken earlier on the individual properties, that the employees' proposals for health and welfare benefits and unrestricted free transportation privileges do not come within the category of subjects for collective bargaining under the Railway Labor Act. The employees declined to withdraw their proposals on these subjects and rejected the railroads' offer to negotiate the other pending proposals. After termination of the conferences by the employees on November 4, 1953, the railroads petitioned the U. S. District Court at Chicago for a declaratory judgment to determine whether or not such proposals are subject to negotiation.

In the meantime, on October 20, the non-operating organizations requested the services of the National Mediation Board, and on November 4, requested the board to begin mediatory efforts immediately. Members of the Mediation Board met with the parties on November 9, and on November 11, 1953, the case was officially docketed. Mediation was recessed on December 17. On December 28 the President created an emergency board to investigate the dispute and make recommendations.

Maintenance-of-Way Employees. For about three years, the railroads have had before them notices of the desire of the Brotherhood of Maintenance-of-Way Employees to revise and supplement existing agreements so as to provide for stabilized employment. The Eastern railroads set up a Conference Committee to handle this matter, but the Western and Southeastern railroads have taken no action to date. The Eastern Carriers' Conference Committee, on April 24, 1953, entered into an agreement to the effect that the Eastern railroads would review the programming and budgeting of maintenance-ofway work to the end that complaints as to unreasonable fluctuations in the number of maintenance-of-way employees may be minimized, realizing that no satisfactory formula has yet been devised for application to railroads as a group. The committee was continued in existence for

a period of not less than two years in order that, if

necessary, the parties may again confer.

Train Dispatchers. On November 5, 1953, agreement was reached with the Train Dispatchers' organization disposing, in part, of demands which had been served almost a year earlier covering paid sick leave, additional vacation days, and an "improvement factor" wage increase. The agreement provided for a wage increase of \$8.00 per month (the equivalent of 4 cents per hour) retroactive to December 1, 1952, the same hourly increase provided for in the Guthrie Award covering operating and non-operating employees. Certain of the rules changes proposed by the dispatchers were withdrawn and action on the proposals for sick leave and vacations, together with certain carrier proposals for changes in rules, was deferred for later negotiation between the Carriers' Conference Committees and the American Train Dispatchers Association.

Conductors. The conductors, in the summer of 1953, renewed their 1949 proposal for establishment of graded rates of pay in all classes of service, based on weight-ondrivers of locomotives. This demand was originally considered and rejected as part of the general 40-Hour Week Wage and Rules dispute. The demand was renewed by the conductors in June 1953, despite the moratorium on changes in rates of pay and working conditions until October 1, 1953, contained in the May 23, 1952, wage and rules agreement with the conductors, A threatened strike of conductors set for September 10, 1953, was cancelled as agreement was reached on September 3, 1953, whereby the demand for graded rates of pay would be handled by the railroads after October 1, 1953. Negotiations on this demand on the individual properties were concluded without settlement, and meetings between the Carriers' Conference Committees and the Order of Railway Conductors commenced on December 9, 1953, Meetings between the parties were terminated on December 15, and the services of the Mediation Board were jointly invoked. It is expected that mediation will begin January 11, 1954.

Demands Served October 1

Engineers, Firemen, Trainmen and Switchmen. On October 1, 1953, the four organizations representing employees in those occupations requested general wage increases. The Engineers' notice requested that basic daily rates be increased by 30 per cent; the Firemen requested an increase in basic wage rates of $37\frac{1}{2}$ cents per hour, or \$3.00 per basic day, with an additional increase of $37\frac{1}{2}$ cents per hour for yard employees working under 5-day week agreements; the Trainmen sought an increase in basic wage rates of $37\frac{1}{2}$ cents per hour, or \$3.00 per basic day; the Switchmen requested an increase of 40 cents per hour. All four organizations asked to have part of all of the cumulated cost-of-living increases to date incorporated in basic rates.

In addition, the Switchmen requested that rates of pay for switchmen working on the second shift be further increased by 10 cents per hour and that for the third shift a differential of 15 cents per hour be established. They requested double time for performing service on holidays, and double time instead of time and one-half for all overtime. Additional vacation days were sought, as well as sick leave with pay and hospital, medical and surgical care.

On December 9, the Carriers' Conference Committees and representatives of the Firemen, Trainmen and Switchmen conferred. By agreement dated December 16, the carriers and the Trainmen settled their dispute by eliminating the cost-of-living escalation clause of their contract, incorporating the cumulated 13 cents per hour cost-of-living allowance into basic rates, granting a further 5-cent per hour increase in basic rates as of December 16, and granting an additional week's vacation (a total of three weeks) for employees having fifteen or more years of service.

Conferences with the Switchmen were terminated on December 17 and with the Firemen on December 18, as further handling was deferred until after January 1, 1954. After a preliminary conference with the Engineers, the handling of their wage demand was deferred until

January 6, 1954.

The Diesel Arbitration. An arbitration board began hearings in Chicago on October 27, 1953, to determine whether or not the railroads are violating that section of the Diesel Agreements which provides that a fireman (helper) shall be in the cab at all times when a train is in motion in high-speed, streamlined, or main-line through passenger service, and further that if compliance with the foregoing requires the services of an additional man to perform the work customarily done by the fireman (helper), he shall be taken from the ranks of the firemen. This arbitration proceeding was provided for in the Firemen's Mediated Diesel Agreements of May 17, 1950. Hearings have been held intermittently, and are scheduled to resume on January 11, 1954.

Union Shop. By April 1953, a majority of Class I railroads had entered into union shop agreements covering some or all of the employees represented by labor unions. Commencing in April and May 1953, negotiation on union shop agreements on several railroads in the South and West was blocked by pending civil suits. On still other railroads certain employees sought, by court action, to restrict enforcement of union shop agreements. By the end of the year at least a dozen separate cases were pending in the courts in which the plaintiff employees seek restraining orders against the defendant railroads and unions prohibiting either the negotiation of union shop agreements or the enforcement of union shop agreements which had been negotiated.

MATERIAL PRICES AND WAGE RATES

he index of average unit prices of railway material and supplies, compiled quarterly by the Bureau of Railway Economics, has recently been revised and the base of the index (the period taken as 100) changed to the mid-year aver-

age of 1947-1949. This change was made in order to put the railroad price index on the same basis, from the standpoint of timing, as the wholesale and retail price indexes compiled by the United States Bureau of Labor Statistics.

The revised index is shown for various dates from 1939 to 1953-in Table 8.

Table 8—Railway Material Price Index (Mid-year, 1947-1949=100)

Month		Material & supplies (other than fuel)	fuel (coal & oil)
October 1953	123.8	131.1	111.8
July 1953	123.4	131.1	110.6
April 1953	121.1	128.4	109.3
January 1953	119.7	126.8	108.2
October 1952	118.5	126.3	105.9
July 1952	118.0	124.2	108.0
April 1952	119.0	124.6	109.8
January 1952	119.4	124.3	111.5
July 1951	119.7	124.4	112.1.
July 1950	107.1	109.0	104.1
July 1949	102.5	104.7	98.8
December 1948	111.9	110.1	114.8
December 1945	71.3	72.1	69.3
December 1939	52.6	55.5	47.5

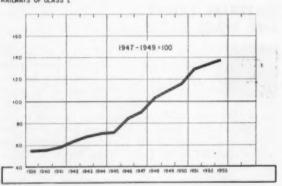
Table 9-Material Prices and Wage Rates

		(Average 19	47-1949=100)	
Year		Charge-out prices for all materials including fuel	Wage rates	Material prices and wage rates combined
1953	(prel.)	122.0	143.5	137.1
1952		119.1	140.8	134.3
1951		117.5	134.1	129.1
1950		105.7	120.5	116.1
1949		106.4	110.0	108.9
1948		104.7	100.2	101.6
1945		69.3	71.2	70.6
1939		52.0	56.5	55.2

Between December 1939 and July 1951, the all-material index rose from 52.6 to 119.7. The index fell slightly to 118.0 in July 1952, but turned upward again thereafter, standing at a new all-time high of 123.8 in October 1953. The all-material index in October 1953 was 135.4 per cent above December 1939. During the year 1953, the index rose from 119.7 in January to 123.8 in October, an increase of 3.4 per cent.

Both the fuel and other-than-fuel segments of the index have shown generally similar patterns of movement since December 1939. The principal difference occurred in the

INDEX OF COMBINED WAGE RATES AND CHARGE OUT PRICES
RAILWAYS OF GLASS I



case of fuel where prices as of October 1953 were still lower than their peak, which occurred in December 1948.

The indexes in Table 8 show the trend in spot prices. A charge-out price index (reflecting original cost of materials consumed) is shown in Table 9, as well as an index for wage rates, years 1939, 1945, and 1948 to 1953.

Data on the length of time material and supplies are held in stock or on hand before being used form the basis for converting spot prices into charge-out prices.

Between 1939 and 1953, the charge-out index for material prices and wages combined (average 1947-1949=100) rose from 55.2 to 137.1, or by 148.4 per cent. From 1945 to 1953, the combined index for material prices and wages rose by 94.2 per cent.

Chart D is a graphic representation of the rise since 1939 in the unit costs of labor and materials.

NO MAJOR CHANGES IN RATES AND FARES

service deficit.

CHART D

hile there was considerable activity in the field of rates and fares during 1953, the only significant changes in rate and fare levels took place in the area of passenger and allied services. The commission denied the railroads' petition for authority to remove the expiration date in Ex Parte 175 freight rate increases, but did extend that expiration date to December 31, 1955. Changes in basic passenger fares, express rates and mail pay rates during the year were made with the view of reducing the passenger

Freight Rates. The most important development in this area during 1953 was the extension until December 31, 1955, of the general increase in freight charges which the Interstate Commerce Commission authorized in its April 11, 1952, decision in Ex Parte 175, Increased Freight Rates, 1951. In a petition dated March 27, 1953, the rail carriers asked the commission to remove, without hearing, the time limitation on the temporary increases authorized by the commission's 1952 order and to authorize incorporation of those surcharges into the basic rate structure. The commission refused to act upon the petition without a hearing but did order a shortened procedure whereby testimony and exhibits were filed in the form of verified statements. After brief hearings for purposes of cross examination, oral argument was heard by the full commission and the case was submitted on July 15, 1953.

On July 29, the commission issued, without report, its order prescribing that Ex Parte 175 increases be extended from the original expiration date of February 28, 1954, to December 31, 1955. In ordering this extension of 22 months, the commission declined to authorize integration of the Ex Parte 175 surcharges into the permanent rate structure. On August 12 the commission made public its report (dated August 10, 1953) in support of the July 29 order. Citing uncertainty as to whether 15 years of war prosperity would continue indefinitely, the report stated that it was impossible for the commission accurately to evaluate factors affecting the nation's economy, and consequently the railroads, for long periods ahead. As against this imponderable, however, the commission justified the extension of the increases as

"insurance" against any possible slow-down or breakdown in a transportation service which is essential "in periods of national emergency as well as in the more pro-

saic seasons of peace and tranquility."

Drouth Relief Rates. Due to prolonged drouth which centered originally in the Southwest but which also affected other parts of the country, the Western railroads on July 1, 1953, by Section 22 quotation to the Department of Agriculture, reduced by 50 per cent the rates on feed for live stock and hay from points in Western states to sizes in the Southwest which had been designated as "drouth areas." These reduced rates applied only on property of the U. S. Department of Agriculture on which the government assumed the freight charges. This Section 22 quotation was cancelled effective November 16, 1953.

Under authority of Drouth Order No. 47 of the Interstate Commerce Commission, effective August 14, 1953, reductions of 50 per cent were established by tariff on commercial shipments of live stock outbound from drouth areas to points in Western states for grazing. Under the same authority, effective on various dates from October 24 to November 7, 1953, the Western, Eastern and Southern railroads established by tariff a reduction of 50 per cent in the rates on commercial shipments of hay from points in Western, Southern and Eastern territories to points in Southern and Western territories which had been designated as drouth areas. These tariffs were scheduled to excire on December 31, 1953.

The aggregate reduction in freight charges amounted to well over \$6 million.

Passenger Fares. On April 6, 1953, the Interstate Commerce Commission authorized an increase of approximately 10 per cent in basic passenger fares for a group of railroads serving the Southwest. In its report the commission also found that the increased fares should apply on intrastate passenger traffic in Arkansas, Nebraska, and Texas. The effect of the authorized increases was to bring passenger fares of the Southwestern carriers involved up to the level of those for Southern carriers, but still below those maintained by railroads serving the East. With the exception of increases authorized in Intermediate Class Fares in Western Territory (283 I.C.C. 261) which cancelled tourist sleeping car fares in 1951, the proceeding marked the first time in almost five years that any of the Western carriers had proposed an increase in passenger fares.

Family Economy Fares Continued. Encouraged by public response to reduced family round-trip group fares, good for travel in coaches between points more than 100 miles apart, established in June 1952, fifteen Eastern railroads extended for a third time the plan which, when the head of a family pays full one-way fares in both directions, permits the other parent and all children from 12 to 22 years of age to pay only one-half of the one-way fare. The new extension was to December 31, 1953. A similar plan applicable to first-class travel was instituted on September 1, 1953, by the Chicago & North Western and Union Pacific and later by two additional carriers.

Furlough Rates for Servicemen. Reduced rates for military personnel traveling in uniform at their own expense were extended by the railroads during 1953 to March 31, 1954. The action continued the tax-exempt round-trip fares at the rate of 2.025 cents or less per

mile, good in coaches, and provided servicemen with savings of up to 1 cent per mile, while including all regular stop-over and baggage privileges.

Commutation Fares. Adjustments in commutation fares were effected during the course of the year for suburban travel in Chicago, in New Orleans, in the New Jersey area adjacent to New York City, and in Philadelphia. The change in rates in the Philadelphia area marked a departure from recent patterns. With a view toward increasing traffic volume, fares were reduced by between 25 and 36 per cent for shoppers going into Philadelphia during non-rush hour periods.

Charges for Checked Baggage. Upon reconsideration of its May 15 decision in I. & S. Docket No. 6015, Service Charges for Checking Baggage, the commission on October 5 authorized railroads in the Central, Trunkline, and Southern territories to establish fees of 25 cents for each piece of baggage and 50 cents for each trunk checked for transportation on trains. By year end, some 58 railroads planned to install or had installed these

newly authorized charges.

Express Rates Increased

Express Rates. The I.C.C. on July 20, in Ex Parte 185, Increased Express Rates and Charges, 1953, authorized the Railway Express Agency to increase its rates and charges an average of about 15 per cent. While the agency had requested an average increase of 23.5 per cent, the increase as authorized was calculated to supplement express revenues by about \$55 million annually.

Under authority of the commission's decision in Docket No. 31317, the Railway Express Agency's contract with the railroads was continued to December 31, 1973. The contract superseded was due to expire Feb-

ruary 28, 1954.

Mail Pay. Toward the year's end the railroads reached an understanding with the postmaster general whereby mail pay rates would be increased by 10 per cent retroactive to October 1, 1953. This understanding is subject, of course, to approval by the I.C.C. Hearings on the matter were scheduled to begin in Washington on January 6, 1954.

In other matters, the commission in I. & S. Docket No. 6013, on April 24, 1953, approved increased charges for pickup and delivery services on less than carload traffic

in Eastern territory.

The railroads in September sought an increase of 31.6 per cent in present charges for line-haul refrigeration services. Hearings on this petition opened in Washington on December 9 and are scheduled to be resumed in Washington in February, 1954.

AVERAGE REVENUE PER UNIT OF TRAFFIC

evenue per ton-mile averaged 1.479 cents during the first nine months of 1953, while revenue per passenger-mile averaged 2.653 cents for the same period. Table 10 shows the averages for 1921, which were prewar highs, for

the averages for 1921, which were prewar highs, for each year from 1944 to 1952, and for the first nine months of 1953.

Table 10-Revenue per Unit of Traffic

		Por	Par
		ton-mile	passenger-mile
Year		(cents)	(cents)
1953	(9 mos.)	1.479	2.653
1952	***************************************	1.430	2.664
1951		1.336	2.601
1950	***************************************	1.329	2.561
1949	************	1.339	2.452
1948	***************************************	1.251	2.341
1947	***************************************	1.076	2.097
1946	***************************************	0.978	1.947
1945		0.959	1.871
1944	***************************************	0.949	1.874
1921	snio-monumentonomina	1.275	3.086

The ton-mile average for the first three quarters of 1953 reflects the higher freight rates in effect during the first four months of the year, as compared with the same period of 1952, as well as the effect of changes in the consist of traffic and in average hauls.

Average revenue per passenger-mile for the first three quarters of 1953 was fractionally lower than in 1952, averaging 2.653 cents.

CAPITAL EXPENDITURES AND PURCHASES

able 11 shows gross capital expenditures of railways of Class I for additions and betterments to their properties, and amounts spent for purchases of fuel, material and supplies, years 1944 to 1953. Entries for 1953 are partially estimated.

Capital expenditures for 1953 were approximately \$1,251 million. While expenditures for plant improvement have been somewhat larger than this in four postwar years (1948, 1949, 1951, and 1952), the 1953 aggregate was larger than in any year prior to 1948, and marked the sixth successive year in which such expenditures exceeded the \$1 billion mark. The total for 1953 was less than the record expenditures made in 1951 by \$163 million and less than 1952 expenditures by \$82

During the eight postwar years, 1946 to 1953, capital expenditures aggregated \$9,076 million, an average of \$1,135 million per year. The high level of expenditures

Table 11 Capital Expenditures and Purchas

Тавіе II—Сарка	Gross capital expenditures	Purchases of fuel, materials and supplies
Year	(thousands)	(thousands)
1953*	\$1,251,000	\$1,800,000
1952	1,333,306	1,817,750
1951	1,413,995	2,175,859
1950	1,065,842	1,739,908
1949	1,312,200	1,641,406
1948	1,273,484	2,183,331
1947	B64,689	1,909,209
1946	561,957	1,570,555
1945	7/2 000	1,572,404
1944	640.110	1,610,529
* Partially estimated		

since the war is due in part to higher price levels, but also reflects the extensive railroad improvement program. During the postwar period \$6,400 million, or better than 70 per cent of such expenditures, have gone for equipment alone.

Of the 1953 expenditures, 68.1 per cent was allocated to equipment and the remaining 31.9 per cent to roadway and structures. This shows the continued emphasis on new equipment, especially diesel-electric locomotives and freight cars.

Purchases of fuel, material and supplies in 1953 are estimated at \$1,800 million, approximately equal to the amount expended in 1952. Moderate rises in purchases of rail and other material indicated during the first half of 1953 appear likely to be offset by a continued decline in dollar value of fuel purchases.

EQUIPMENT SITUATION IMPROVED

able 12 shows railroad ownership of locomotives and freight cars at the end of each year 1947 to 1953, together with annual installations, and new equipment on order. The

entries for 1953 are as of December 1 for ownership and unfilled orders and, in the case of installations, cover the first eleven months of the year.

Table 12—Equipment Ownership and Installations CLASS I RAILROADS

	Ownership	Installed	On order
	at end	during	at end
	of year	year	of year
Steam locomotives:			
1953 (Dec. 1)	11,963	*14	1
1952	15,903	19	15
1951	21,200	18	19
1950	25,265	12	16
1949	28,809	57	13
1948	32,613	86	72
1947	34,800	72	30
Diesel and electric locomotive	8: a		
1953 (Dec. 1) b	16,908	*1,732	468
1952	15,322	2,396	817
1951	13,017	2,540	1,720
1950	10,531	2,384	1,628
1949	8,169	1,808	885
1948	6,368	1,401	1,561
1947	4,964	773	1,196
Freight-carrying cars: ¢			
1953 (Dec. 1)	1,776,741	*64,407	30,703
1952	1,756,700	63,748	67,138
1951	1,751,731	84,218	104,831
1950	1,717,659	39,872	109,174
1949	1,749,736	78,876	12,861
1948	1,754,840	96,204	84,161
1947	1,731,231	57,031	99,216
*11 months.			

a Complete locomotives as operated. b Includes 10 gas turbine electric locomotives owned, 4 Installed, and 15 on order. Excludes railroadcontrolled private refrigerator car lines.

Locomotives. Substitution of diesel-electric locomotives for steam locomotives continued in 1953. However, there was a marked tapering off in the dieselization program as retirements of old steam locomotives declined from the record level of 1952 and installations of new diesels continued to recede from the peak reached in

Although ownership of diesel-electric locomotives has grown steadily since the first locomotive of this type was placed in service 25 or more years ago, the greater part of the shift to diesel power was concentrated in the fiveyear period ending with 1953. Nearly two-thirds of the diesels now in service have been installed since the end of 1948, and a similar proportion of steam locomotives in service at the close of 1948 has been retired during the

same five-year period.

Tapering off in dieselization programs is also disclosed by examination of the backlog of locomotives on order. Only 443 new diesel locomotives (634 units) were on the builders' order books on December 1, 1953, fewer than for any corresponding date since 1945. In addition, 1 steam locomotive, 10 electrics and 15 gas turbine-electrics were on order. New locomotives placed in service during the first eleven months of 1953 totaled 1,746 (1,990 units), including 1,728 diesels (1,972 units), 14 steam and 4 gas turbine locomotives. The number installed was less than in corresponding periods of 1950, 1951 and 1952, but was nevertheless substantial, exceeding that of all other years of the past quarter-century.

Due in part to continuing retirements of large numbers of the older steam locomotives, there was a marked reduction in the percentage of unserviceable locomotives during 1953. This figure declined from 6.6 per cent on January 1 to 4.9 per cent on November 1, the lowest reported since January 1, 1944, when bad order locomotives amounted to 4.8 per cent of ownership. This ratio rose slightly to 5.0 per cent on December 1, 1953.

Car Ownership Gained

Freight Cars. The year 1953 was the third in succession in which freight car ownership of Class I railroads increased. More new freight cars were installed than in 1952, retirements were fewer and the gain in ownership was greater than in the previous year.

Class I railroads installed 64,407 new cars during the first eleven months of 1953, compared with 58,045 during the corresponding months of 1952. Although governmental controls over allocation of steel were removed at mid-year, these restrictive controls affected freight car production throughout the first nine months of 1953.

Freight car ownership on December 1, 1953, totaled 1,776,741, an increase of 20,041 cars since the beginning of the year. The ownership on December 1 was the highest reported for any date since May 1, 1936, exceeding the World War II peak of 1,772,667 cars owned August

Since the outbreak of the Korean War, Class I railroads have placed in service 240,883 new freight cars and have retired 188,230 old cars. Thus the ownership on December 1, 1953, was greater by 52,653 cars than on July 1, 1950.

The continuing increase in average carrying capacity of freight cars has brought about a greater increase in aggregate freight car capacity than that indicated by the ownership figures alone. Since July 1, 1950, while ownership has increased by 3.1 per cent, average freight car

capacity has increased by 2.0 per cent, and aggregate capacity is greater by 5.1 per cent. Similarly, aggregate carrying capacity is now greater by more than 10 per cent than the capacity of a like number of cars owned in 1936.

The percentage of freight cars undergoing or awaiting repairs rose gradually in 1953 from 5.0 per cent on January 1 to 5.2 per cent on December 1. The average for eleven months was 5.1 per cent compared with an average of 5.4 per cent for the year 1952. Cars given heavy repairs during the first eleven months of 1953 totaled 355,516. This was an increase of 21,070 cars, or 6.3 per cent, over the number repaired in the correspond-

ing period of 1952.

Due to the greater freight car ownership, the lower bad order ratio, and a somewhat flattened peak of carloadings in 1953, car supply requirements were met with less difficulty than in any other postwar year. The maximum daily freight car shortage was 5,459 for the week ended June 27. Maximum shortage during the autumn period of peak carloadings was 5,393 for the week ended October 3, compared with the 1952 maximum of 18,558 for the week ended September 27. The average daily shortage for 50 weeks of 1953 was 2,409 compared with 4,841 cars for the year 1952.

Passenger Equipment. Railroad ownership of passenger train cars of steel or steel underframe construction numbered 35,270 on July 1, 1953. This was a reduction of 556 from the beginning of the year. An additional 6,227 cars were operated by the Pullman Company, 114 less than on January 1. There were 112 new passenger train cars placed in service during the first half of the year and 566 new units remained on order on July 1. This order backlog was greater by 146 than on January 1, 1953, and 414 greater than at the beginning of 1952.

MOTIVE POWER TRENDS REFLECT DIESELIZATION



iesel-electric locomotives in 1953 continued to assume an increasing share of the motive power burden, as additional thousands of the older and less efficient steam locomotives were relegated to retirement or standby service.

Table 13 shows the percentage of total service performed by steam, diesel-electric and other types of locomotives in freight, passenger and yard services in 1944, in the years 1948 to 1952, and in the first ten months of 1953.

Diesel-electric locomotives hauled 73.9 per cent of all gross ton-miles of freight cars and contents in the first ten months of 1953, moved 78.9 per cent of the passenger train car-miles and accounted for 82.6 per cent of the total hours of service of yard locomotives. In each case the diesel proportion showed a substantial increase over corresponding figures for 1952, but the increases in 1953 over 1952 were smaller than the gains made in 1952 over 1951.

Decreases in the steam locomotive proportions of service performed in 1953 compared with 1952 were approximately equal to the diesel increases. There was little change in the share accounted for by electric and other types of locomotives as a group, although a separation

Table 13—Locomotive Utilization

PERCENTAGE OF FREIGHT, PASSENGER AND YARD SERVICES
PERFORMED BY TYPE OF POWER

Y	fear			Diesel	Electric
			locomotives	electric	and other
		Freight Service	(Gross Ton-miles,	Cars and	Contents)
1	953	(10 mos.)	24.15%	73.91%	1.94%
1	952	*************************	32.61	65.52	1.87
1	951	***************************************	45.51	52.65	1.84
1	950	***************************************	53.91	44.13	1.96
1	949	***************************************	63.05	34.89	2.06
1	948	***************************************	76.70	21.27	2.03
. 1	944	***************************************	94.56	3.59	1.85
		Passenger	Service (Passenger-	train Car-m	iles)
1	953	(10 mos.)	14.63%	78.90%	6.47%
1	952	***************************************	21.88	71.50	6.62
1	951	************************	30.89	62.73	6.38
1	950	***************************************	36.31	57.30	6.39
1	949	***************************************	44.25	49.29	6.46
1	948		53.92	39.55	6.53
1	944		85.87	8.00	6.13
		Yar	d Service (Locomoti	ve-hours)	
1	953	(10 mos.)	16.29%	82.55%	1.16%
1	952	***************************************	22.01	76.72	1.27
1	951	**********************	30.97	67.79	1.24
1	950	************************	38.20	60.45	1.35
1	949	***************************************	47.83	50.77	1.40
1	948	***************************************	61.75	36.95	1.30
1	944	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	77.31	21.32	1.37

of this group as between electric locomotives and others reveals the growing importance of the gas turbine locomotive in road freight service. "Other locomotives," the class in which gas turbines are included, hauled 0.19 per cent of freight service gross ton-miles in the first ten months of 1953, compared with 0.10 per cent in the year 1952 and only 0.01 per cent in 1951.

Chart E portrays graphically the dramatic rise of the diesel in the motive power picture since 1940.

FURTHER PROGRESS IN EFFICIENCY AND ECONOMY

he next four tables compare significant performance averages for the first ten months of 1953 with annual averages for the years 1944 to 1952.

While traffic volumes in 1953 declined somewhat under 1952 levels, and were considerably less than volumes handled in the war years, most operating averages moved

Table 14—Ton-miles per Freight Train-hour

	1244-13	23	
		Gross	Net
Year		ton-miles	ton-miles
1953	(10 mos.)	51,766	23,574
1952	***************************************	49,118	22,567
1951	*********	46,407	21,760
1950	***************************************	44,352	20,343
1949	***************************************	42,346	19,024
1948	***************************************	39,903	18,778
1947	**** **********************************	38,462	18,126
1946	***************************************	37,057	17,173
1945	*************	36,954	17,482
1944	***************************************	37,298	17,623

upward to new records, indicating continued progress in operating efficiency.

A most significant performance average is ton-miles per freight train-hour, which combines both load and speed factors. The unit output per hour of freight train operation is computed on two bases: (1) gross ton-miles of cars and contents per freight train-hour, and (2) net ton-miles (lading only) per freight train-hour. Both averages are shown in Table 14. Averages for the first ten months of 1953 indicate that new records for both factors will be set for the year. It will mark the seventh consecutive year in which both averages set a new record.

PROPORTION OF PERFORMANCE RENDERED BY DIESEL POWER

CHART E

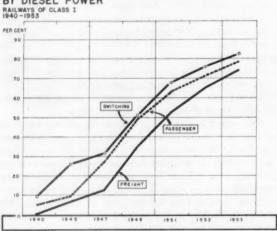


Table 15-Daily Mileage, Locomotives and Cars

		Active freight	Active passenger	Serviceable
Year		locomotives	locomotives	freight cars
1953	(10 mos.)	133.1	287.2	47.0
1952	********************	126.8	266.1	46.2
1951	************************	122.5	247.6	47.2
1950	*********	119.3	237.2	46.5
1949	******************	112.5	228.5	42.9
1948	*************************	116.8	220.9	47.2
1947	*********************	120.3	219.0	48.8
1946	************************	115.9	221.8	45.2
1945	********************	118.4	226.9	49.3
1944	******************	122.8	222.9	51.9

Table 15 shows daily mileage averages for locomotives and freight cars for the calendar years 1944 to 1952, and the first ten months of 1953. New records in this category were established by both freight and passenger locomotives. Active freight locomotives in 1953 averaged 133.1 miles per day, 6.3 miles more than the record set in 1952, and 8.6 miles more than the average for the previous record year, 1943. Active passenger locomotives averaged 287.2 miles per day, an increase of 21.1 miles over 1952, also setting a new record. The great strides made in both these averages in recent years is a direct tribute to the diesel-electric locomotive and its high percentage of availability.

Serviceable freight cars averaged 47.0 miles per day during the first ten months of 1953, slightly above the average for 1952. The record of 51.9 miles was established in the war year 1944.

Table	16—Average	Train Snood	(manh)
rable	I O-Average	irain Speea	(m,p,n,/

	Freight	Passenger
Year	trains	trains
1953 (10 mos.)	18.1	39.0
1952	17.6	38.3
1951	17.0	37.7
1950	16.8	37.4
1949	16.9	37.0
1948	16.2	36.7
1947	16.0	36.1
1946	16.0	35.5
1945	15.7	34.7
1944	15.7	34.8

Train speeds, which declined during the war years when traffic conditions inreased the elapsed time of trains between terminals, have since more than regained prewar levels. Averages for the years 1944 to 1952 and the first ten months of 1953 are shown in Table 16.

Average freight train speed during 1953 increased five-tenths of a mile over 1952 in setting a new record of 18.1 miles per hour. Passenger train speed was seventenths of a mile above 1952, also setting a new record of 39.0 miles per hour.

Table 17 shows average load per train and per car in both freight and passenger services. In freight service, average load per train increased slightly in 1953, while average load per car was somewhat less than in 1952. In passenger service, both train and car occupancy declined. This decline reflected the general reduction in passenger traffic handled during the year.

SAFETY RECORD FAVORABLE

ailroad safety in 1953 was maintained at a high level, although results fell short of the overall excellency attained in 1952.

In the field of passenger transport, the record for the first ten months of 1953 was not so good as it was a year earlier. During this 1953 period, 20 passengers lost their lives in train accidents (collisions, derailments, etc.), compared with no passenger fatalities in this category during the like period of the preceding year. In fact, the year 1952 stands alone in the annals of rail safety in that not a single passenger lost his life in a train accident during the entire year. There were 19 passenger fatalities in train-service accidents during the ten-month period of 1953, compared with 11 fatalities during the like period of 1952. Train-service accidents arise largely from negligence or carelessness on the part of passengers themselves, such as attempting to get on and off moving trains. A casualty rate of 0.15 per hundred million passenger-miles for all passenger fatalities during the first ten months of 1953 compares favorably with some of the better safety records in the past.

Table 17—Average Train and Car Loads

		Freight Service		Passenge	r Service
		Net tons	Net tons	Passengers	Passengers
Year		per train	per car	per train	per cer
1953	(10 mos.)	1,315	32.2	*96.3	*17.8
1952	************************	1,296	32.5	98.5	18.1
1951	********************	1,301	33.0	97.2	18.1
1950	*******	1,224	31.7	88.5	17.0
1949	******* *******************************	1,138	31.4	92.3	18.1
1948	4********	1,176	32.9	101.1	19.4
1947	***************************************	1,146	32.6	110.7	21.0
1946	**********************	1,086	31.3	144.3	24.5
1945	************************	1,129	32.2	190.5	30.2
1944	444440000000000000000000000000000000000	1,139	32.7	200.7	31.9
*9	months				

Employee fatalities during the first ten months of 1953 were the lowest on record for any comparable period. There were 253 employee deaths for this period compared with 301 for the like period one year ago. If this pace was maintained for the balance of the year, a new employee safety record will have been established, bettering the record of 0.12 fatalities per million man-hours worked, established in 1952. Non-fatal injuries to employees are also below the number recorded last year, and should be fewer in number for the year as a whole than at any time excepting a few of the light traffic years in the thirties.

Highway grade crossing accidents which have trended downward in recent years took an upward turn in 1953, During the first ten months of the year, fatalities in such accidents increased by 10 per cent while non-fatal injuries were greater by approximately one per cent.

On the whole, the safety record established by the railroads during the first ten months of 1953 was a gratifying one, and the railroads are rightfully proud of their accomplishments in the field of safety over the years.

OTHER DEVELOPMENTS

ncreased Refrigerator Car Rentals. Effective April 1, the mileage allowance paid by railroads for use of general purpose freight refrigerator cars was increased from 3.5 cents to 4 cents and the allowance for RB type cars from 3.2 cents to 3.5 cents. Effective August 1, the mileage allowance for passenger service express refrigerator cars was increased from 3.5 cents to 4.75 cents.

A.A.R. Research Facilities Expanded. Construction of a new Mechanical Research Laboratory by the Association of American Railroads was started in January and completed on October 1, 1953. Supplementing the Central Research Laboratory which was completed in March 1950, the new facilities will add to the efficiency and effectiveness of the research work carried out by the association. Major additions during the year to the testing equipment available at these installations were the installation of a Sonntag Fatigue Testing Machine and a revolving drum testing machine for use in container research.

Pan American Railway Congress. The VIII Pan

American Railway Congress, under the joint auspices of the State Department of the United States and the Pan American Railway Congress Association (whose head-quarters are in Buenos Aires) was held at Washington, D. C., and Atlantic City, N. J., June 12-25, 1953. This was the first congress ever held in any English-speaking country by the P.A.R.C.A., which has for its purpose the advancement of railway technology and efficiency in the Western hemisphere. The United States officially became a member of the organization by act of Congress in 1948, Registration at the VIII Congress was 297, with distinguished visitors and members of families of registrants bringing total attendance to 457 persons, from 24 countries of the Western hemisphere, Europe and Asia.

The congress met in Washington June 12-20, where it considered and acted upon 168 technical papers from sixteen countries. It was then moved, on June 21, by special train to Atlantic City, where its members had opportunity to inspect a \$20,000,000 exhibit of railway equipment and appliances assembled by the Railway Supply Manufacturers Association for the congress and concurrent meetings of the A.A.R. and the American Short Line Railroad Association. The closing event was a luncheon at Atlantic City June 25, with attendance of 500, at which cash prizes were awarded for papers selected by an International Prize Award Jury. Such prizes from U. S. sources, principally members of the railway supply industry, totaled \$13,000.

President William T. Faricy of the A.A.R. was chairman of the U. S. National Commission in the P.A.R.C.A., host body for the congress, and also chairman of the U. S. Delegation to the congress. James G. Lyne, editor of *Railway Age*, was chairman, and L. J. Kiernan, of the A.A.R., was secretary general of the congress.

RAILROAD RETIREMENT BOARD OPERATIONS

ailroad Retirement. The number of beneficiaries on the retirement rolls of the Railroad Retirement Board, as well as the benefit disbursements to such beneficiaries, rose to new high levels in 1953. Beneficiaries numbered 540,079 as of October 31, 1953, compared with 510,330 on the same date in 1952, an increase of 29,749. The 1953 total comprised 278,758 retirement annuitants, 4,460 pensioners (persons transferred from the voluntary rolls of the railroads in 1937), 93,582 spouse annuitants and 163,279 recipients of survivor annuities.

The increase in number of beneficiaries in 1953 was accounted for by a net increase of 15,231 in retirement annuities, a decrease of 944 in pensioners, and respective net increases of 7,973 and 7,489 in spouse and survivor annuities.

Total retirement benefit payments in the month of October 1953 aggregated \$39,790,156, compared with \$37,170,899 in October 1952. Thus the annual level of disbursements rose during 1953 from \$446,051,000 to \$477,482,000, an increase of 7.0 per cent.

Retirement tax accruals in 1953 decreased slightly below 1952, reflecting a decline in the average number of employees. For the 10 months ended October 31, 1953, payroll tax accruals by Class I railways amounted to \$223,909,000, compared with \$225,026,000 for the corresponding period of 1952. Similar amounts were paid by railroad employees. The payroll tax rate of 61/4 per cent each on railroads and their employees (121/2 per cent in all) which became effective January 1, 1952, is the maximum under present law.

The following summarizes the financial operations of the railroad retirement system from its inauguration in 1937 to October 31, 1953:

Receipts:		
From U.S. Treasury	\$6,175,377,459	
Interest on investments	477,846,544	
Total		\$6,653,224,003
Disbursements:		
Benefit payments	\$3,433,335,243	
Transferred to administration		
fund (net)	24,197,469	
Total		\$3,457,532,712
Balance as of October 31, 1953		\$3,195,691,291

Administrative expenses for the entire period of operation to October 31, 1953, amounted to \$65,327,705. The amount of \$24,197,469 shown in the foregoing table as transferred to the administration account covers the period since July 1949. Prior to that date, amounts appropriated for administrative expenses were credited to a separate account and expenses were charged directly to that account.

The Railroad Retirement Board early in 1953 issued a report on the fifth valuation of the liabilities and assets of the railroad retirement system as of December 31, 1950. These valuations are prepared at three-year intervals, and are reviewed by an independent Actuarial Advisory Committee, in accordance with provisions of the Railroad Retirement Act. The valuations are made to determine the combined tax rate on railroads and their employees which, together with interest on investment, will be sufficient to meet all obligations of the retirement system for the future.

The valuation found that a total level tax rate on employees and employers of 13.41 per cent on an average annual payroll of \$5 billion would be required to provide sufficient funds to pay all future benefits. This cost is approximately 0.9 percentage point above the present tax rate.

Railroad Unemployment Compensation. Railroad unemployment compensation benefits in 1953 were slightly greater than in 1952 despite the fact that the year 1953 was virtually unaffected by industrial work stoppages such as the prolonged labor dispute in the steel industry which occurred in 1952. This reflected the generally lower level of railway employment during 1953. Benefit disbursements for the ten months ended October 31, 1953, amounted to \$35,912,729, compared with \$34,793,777 for the corresponding period of 1952.

Sickness and Maternity. Benefit disbursements for sickness and maternity in 1953 increased substantially above the levels of 1952. Sickness benefits for the ten months ended October 31, 1953, aggregated \$34,014,623, compared with \$24,413,318 for the corresponding period of 1952, an increase of \$9,601,305 or 39.3 per cent. Maternity benefits amounted to \$2,568,013 and \$1,913,798 for the same respective periods.

Unemployment Taxes and Finance. Unemployment tax accruals by Class I railways for the ten months ended October 31, 1953, amounted to \$17,919,000. For the same 1952 period, the amount was \$18,009,000.

Under the sliding scale of payroll taxes provided by the Railroad Unemployment Insurance Act, the tax rate for ensuing years will remain at 0.5 per cent so long as the amount in the raiload unemployment insurance reserve amounts to \$450,000,000 or more on September 30 of the preceding calendar year. The officially proclaimed balance as of September 30, 1953, was \$684,680,547, thus assuring a continuation of the 0.5 per cent rate through 1954. This compares with a balance of \$736,753,152-as of September 30, 1952.

The financial results of operation of the railroad unemployment insurance system for the entire period of operation from July 1, 1939, to October 31, 1953, are shown in the following summary:

Receipts:		
Taxes (incl. transfers from states)	\$1,193,382,016	
Interest on unemployment reserve fund	172,400,169	
Total receipts		\$ 1,365,782,185
Disbursements:		
Benefit disbursements (net)		
Unemployment	\$ 415,559,892	
Sickness (excl. maternity)	184,170,922	
Sickness (maternity)	13,811,364	
Administrative expenses	66,125,643	
Total disbursements		\$ 679,667,821
Balance:		
To credit of unemployment reserve	\$ 679,337,517	
To credit of administration fund	6,776,847	
Total balance, October 31, 1953		\$ 686,114,364

Board Members Appointed. The Senate on July 31 confirmed the appointment of Raymond J. Kelly as chairman of the Railroad Retirement Board to succeed the former chairman, William J. Kennedy, who resigned effective August 31, 1953. Frank C. Squire, whose second term as carrier member of the board expired August 28, was given a recess appointment to another five-year term by President Eisenhower. Senate action on this appointment will be taken during the present session.

LITIGATION AND ADMINISTRATIVE PROCEEDINGS

f great interest was the elevation to the position of Chief Justice of the United States on October 5 of Earl Warren, formerly governor of California, following the death of the late Chief Justice Fred M. Vinson.

Additionally, there were important changes during 1953 in the personnel of the Interstate Commerce Commission. Owen Clarke of Yakima, Wash., succeeded Commissioner William J. Patterson, retired; Howard G. Freas, of Oakland, Cal., succeeded Commissioner William E. Lee, retired; and Kenneth H. Tuggle, of Barbourville, Ky., succeeded Commissioner Walter M. W. Splawn, retired. George W. Laird, formerly acting secretary of the commission, was advanced to the position of secretary, succeeding W. P. Bartel, who had retired August 31, 1952. E. F. Hamm, Jr., was appointed to the newly created post of managing director of the commission. In this capacity, Mr. Hamm assumed responsibility for supervision of the administrative machinery of the commission and for effecting organizational changes looking to simplification, expedition and economy.

Seatrain Antitrust Case. (Seatrain Lines vs. Pennsylvania Railroad). By complaint filed December 10, 1951,

amended December 21, 1951, Seatrain Lines, Inc., instituted an antitrust proceeding in the U.S. District Court for the District of New Jersey against the Pennsylvania, Atlantic Coast Line, Louisville & Nashville, and Southern, as "primary defendants," and a number of other defendants, including additional railroad companies and the A.A.R., as "secondary defendants." In this litigation the plaintiff sought injunctive relief against all defendants with respect to an alleged conspiracy to boycott Seatrain, and judgment for treble damages in the amount of \$164,163,000 was sought against the four primary defendants. From an order of the district court dismissing the case, appeal was taken to the Court of Appeals for the Third Circuit. The appellate court sustained the lower court in dismissing the case with respect to the principal allegation of wrongful exclusion of Seatrain from unrestrained access to the national freight car supply. However, the appellate court vacated the order of dismissal and remanded the proceedings to the district court with leave to Seatrain to file an amended complaint confined to charges of conspiracy to induce individual railroads which do not participate in through routes with Seatrain to withhold consent to the interchange of their cars, to discourage shippers from utilizing Seatrain's service, and the like. As of mid-December, no amended complaint had been filed.

Per Diem Changes

Coupler Manufacturers' Case. (U. S. vs. National Malleable & Steel Castings Co., et al.) On May 22, 1953, the federal grand jury in Cleveland returned an indictment charging that six corporations and certain of their officers engaged in the manufacture of railroad couplers had conspired to restrain trade and commerce and to monopolize the trade in such couplers. No railroads or railroad associations were named as parties to this criminal proceeding, but the A.A.R. was named as a party defendant in a companion civil suit in the U. S. District Court for the Northern District of Ohio, wherein an injunction was sought to restore allegedly absent conditions of free competition in the coupler industry. It was understood that the government would proceed first with the criminal case and that the civil proceeding would be held in abeyance in the meantime.

Per Diem Rate. In accordance with procedures provided for in an agreement approved by the I.C.C. under Section 5a of the Interstate Commerce Act (the Reed-Bulwinkle Act), the per diem rate for the use of foreign line freight cars which had been changed from \$1.75 per car per day to \$2.00 effective May 1, 1952, was changed from \$2.00 to \$2.40 per car per day effective August 1, 1953.

Following submission of the latest change in rate to vote by letter ballot of subscribers to the agreement, three Class I railroads (Boston & Maine; New York, New Haven & Hartford; and Rutland) served notice of withdrawal from the Section 5a agreement insofar as it pertains to per diem. Subsequently, these three companies, together with the Long Island and seven smaller lines, also served notice declining settlement of per diem accounts at the rate of \$2.40. In lieu of settlement at the established rate, the railroads serving such notices have offered settlement on the basis of the \$2.00 rate, or in

some instances on a graduated basis of rates depending upon the age of cars. The New York, Susquehanna & Western (a non-subscriber to the Section 5a agreement) had served a like notice on March 16, 1951, with respect to the then effective per diem rate of \$1.75, and since April 1, 1951, has offered settlement at less than the established rate.

On September 21, 24 railroads filed with the I.C.C. a complaint against railroads declining to make per diem settlements at the rate established under Section 5a procedures, asking that the per diem rate in effect at various periods, including the current rate of \$2.40, be declared reasonable and lawful, and that the commission find that uniform observance by all railroads is required in the interest of orderly rail transportation service. A prehearing conference was held with the commission on October 22. Hearings are presently set for January 18, 1954 (under Docket No. 31358), with written evidence to be submitted January 11.

Other proceedings involving the per diem rate included a suit filed on March 4, 1953, by the New York Central and others in the U. S. District Court for the District of New Jersey against the New York, Susquehanna & Western for per diem rental on what is understood to be a quantum meruit basis and a suit filed June 12, 1953, by the Chicago, Burlington & Quincy and others in the same court against the Susquehanna to recover per diem charges on the basis of the established rate. In the last named suit the defendant on August 10, 1953, filed an answer and counterclaim alleging antitrust violation in the establishment of the rate as concerns non-subscribers to the Section 5a agreement and seeking judgment against the plaintiffs for \$3,900,000 treble damages.

Trip-Leasing Regulation

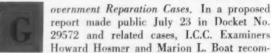
Motor Carrier Trip-Leasing. In a proceeding known as Ex Parte No. MC-43, Lease and Interchange of Vehicles by Motor Carriers, 52 MCC 675, the I.C.C. had proposed to establish and enforce rules which would prohibit single-trip leases of trucks with drivers to certificated carriers, by requiring that all leases be in writing and for a period of not less than 30 days, and would prohibit compensation as between the lessor and the lessee of the truck on the basis of a division of the revenue. The commission's authority to issue and enforce the proposed rules was challenged in court and finally upheld by a decision of the Supreme Court of the United States rendered January 12, 1953, in American Trucking Associations vs. U. S., 344 U. S. 298. On February 18, 1953, there was introduced in Congress H. R. 3203, a bill which would deprive the commission of authority to place any limitation upon the duration of truck leases or to regulate the amount of compensation as between lessor and lessee. By reason of the consideration of this proposed legislation by Congress, the commission, on July 31, deferred the effective date of its proposed rules until March 1, 1954.

On November 30, 1953, the commission issued three additional orders in Ex Parte MC-43. One of these orders postponed until March 1, 1955, the effective date of the proposed requirement that leases be of a duration not less than 30 days and the prohibition of compensation on

the basis of a division of revenue. Another of the orders entered November 30 provided for permanent exemption from these requirements of return movements of trucks following movements exempted from regulation under any of the several agricultural exemptions contained in the Interstate Commerce Act. The third order of November 30 reopened Ex Parte MC-43 for further hearing, at a time and place or places to be hereafter fixed, for reconsideration of the 30-day rule and the prohibition of compensation on the basis of a division of revenue as applied to movements unrelated to agricultural movements.

The status of the proposed legislation embodied in H. R. 3203 is discussed elsewhere in this review.

BRIEF SURVEY OF OTHER DEVELOPMENTS



mended that the commission dismiss 17 compaints involving claims by the federal government for reparation aggregating approximately two billion dollars alleged to be due by reason of the exaction of unreasonable rates during World War II. The examiners' proposed report finds that the rates charged were not unjust and unreasonable. The Department of Justice has been allowed until March 20, 1954, to file exceptions to the proposed report and the railroads have until July 20, 1954, to file their reply.

Interterritorial Divisions. By report and orders in Dockets Nos. 29799, 29885, and 29886, the commission prescribed, after more than five years of investigation, new bases of interterritorial divisions of joint rates between Official and Southern territories and between Official and Southwestern territories. The new divisions, superseding those which had been in effect since 1940, became effective July 15, 1953.

Parcel Post Rates. In proceedings docketed as No. 31074, the commission approved in a report made public June 17 the amended proposals of the postmaster general to increase zone rates on 4th class parcel post by approximately 36 per cent. This permitted the increases to be placed into effect by the Post Office Department on August 1 for international shipments and on October 1 for domestic shipments. By subsequent order dated November 16, the commission also gave its consent to a proposed 16.6 per cent increase in rates on catalogs and similar printed advertising matter and controlled circulation publications. The two decisions combined were estimated to produce approximately \$154,-600,000 annually in additional revenues to the Post Office Department. The last increase previously granted in parcel post rates was the 25 per cent increase authorized by the commission's decision of October 1, 1951.

Section 5a Developments. In a report dated January 21, 1953, the commission approved application No. 26, Railroad Interterritorial Agreement. This agreement, ordered to become effective March 4, 1953, was supported by 325 railroads, water and motor carriers, as well as shipping interests which desired a central com-

mittee where interterritorial tariffs and related matters could be integrated. Citing the need for coordination between actions taken by previously authorized territorial organizations, the commission found that the agreement was within the scope of Section 5a whereby common carriers are relieved of the operations of the antitrust laws for joint action on rates and related matters in accordance with agreements approved by the commission.

In addition to the above agreement, the only one directly involving railroads, the commission considered one application affecting water carriers and thirty applications concerning motor carriers. Of the thirty motor carrier applications, four were denied or dismissed, seven were approved finally and the remainder continued under advisement.

State Vehicle Taxes. In Bode vs. Barrett, 344 U. S. 583, decided February 9, 1953, the Supreme Court of the United States upheld the constitutionality of an Illinois statute imposing a highway use tax measured exclusively by the gross weight of each vehicle using the highways. The statute was challenged by truckers.

Assessment for Grade Separation Improvements. In Atchison, Topeka & Santa Fe vs. Public Utilities Commission of California, decided November 9, 1953, the Supreme Court of the United States upheld the action of the Public Utilities Commission of California in allocating the costs of two grade separation projects as between two railroads and the local governments involved. The railroads were required to pay 50 per cent of the costs. The court held that there was no requirement that the railroads' share of the costs should be based on benefits received by them, and that the state commission's action had not been so arbitrary and unreasonable as to violate the Constitution.

Non-Compensatory Freight Rates. In Baltimore & Ohio vs. U. S., 345 U. S. 146, decided March 16, 1953, the Supreme Court of the United States upheld an I.C.C. order fixing maximum rail rates for the transportation of certain commodities. The railroads attacked the rates as confiscatory and unconstitutional because they would produce less money than it would cost the railroads to carry the particular commodities. The court held that the commission may fix non-compensatory rates for some commodities, so long as rates as a whole afford railroads just compensation for their overall services to the public.

LEGISLATION AFFECTING THE RAILROADS



hile little legislation of primary interest to the railroads was enacted during the first session of the 83d Congress, a number of measures received active consideration and

will be further considered during the second session. Of first importance to the railroad industry among such measures is the so-called "Time-Lag" bill.

The "Time-Lag" Bill, S. 1461, was sponsored by a bipartisan group composed of Senators Johnson (Dem., Colo.), Bricker (Rep., Ohio), and Capehart (Rep., Ind.). The purpose of the bill is to enable railroads and other common carriers to obtain increased rate authorizations within sufficient time to keep more nearly in step with increasing operating costs. The method of accomplishing

this, as employed by S.1461, lies in a proposed new section to be added following Section 15a of the Interstate Commerce Act.

The proposed new section provides that within 60 days after filing of a petition by the carriers seeking a general increase in rates by reason of increased operating costs, the I.C.C. shall enter an interim order authorizing rate increases which in its opinion are appropriate or necessary to permit the carriers, under honest, efficient and economical management, to earn adequate revenues. After such interim rate increases have been made effective, the commission will proceed with its investigation of the increases proposed by the carriers until it has reached a final decision. If the increases authorized by the commission in its final decision are less than those authorized in its interim order, the carriers shall, on demand, make refunds down to the basis of the finally authorized rates on all shipments which moved at the higher interim rates.

The need for such legislation grew out of the spiraling inflation following World War II. Under the Interstate Commerce Act as it is now in effect, general adjustments of carrier rates to meet rising operating costs are possible only after extensive and time-consuming proceedings. During the postwar period, an average of 91/2 months elapsed from the time initial rate proceedings were instituted to the date final authorizations for increased rates were granted. As past experience has shown, a second round of cost increases may be under way, or even in effect, by the time a given general rate increase can be authorized to meet the original round of increased costs. Thus, it is easily understood why losses in revenue to railroads—even with the present type of interim decision granted by the commissionexceeded \$1,000,000,000 during the years 1946-1953 as a direct result of procedural delay.

Hearings on "Time-Lag"

During extensive congressional hearings in 1952, a great deal of attention was given this problem. S.1461 is substantially similar to a proposal supported by the National Industrial Traffic League in the 82d Congress and differs materially only in that the period within which the commission is required to enter its interim order was extended from 30 to 60 days. In the 83d Congress, hearings were held May 5-7, 1953, on S.1461, which with certain minor amendments was favorably reported by the Senate Committee on Interstate and Foreign Commerce. However, it received no consideration on the Senate floor prior to adjournment.

In the House of Representatives, a bill designed to accomplish the same result as S.1461, but differing from the Senate version in certain important respects, was introduced by Representative Dolliver on May 7, 1953, as H.R.5052. A later bill, H.R.6395, also introduced by Representative Dolliver, on July 20, follows verbatim the text of S.1461 as reported by the Senate Committee, with the addition of an amendment subsequently proposed to be made to the Senate bill by its original authors. Both H.R.5052 and H.R.6395 were referred to the House Committee on Interstate and Foreign Commerce, where at the year end, hearings had yet to be scheduled.

Wartime Excise Tax Repeal. Although the 15 per cent

passenger and 3 per cent freight wartime federal excise taxes on amounts paid for transportation are imposed upon the users of public transportation services and are not paid by the carriers themselves, the railroads and other transportation agencies have a vital interest in their repeal or reduction by reason of the inducement they offer for the use of private carriage, which is not subject to the taxes. Following the introduction of numerous bills dealing with the subject of excise taxes in general, the House Ways and Means Committee held extensive hearings during June, July and August. While no proposal for the reduction or elimination of the transportation excise tax progressed beyond referral to committee, the President's Memorandum of Disapproval of H.R.157, a bill passed by Congress which would have repealed the excise tax on moving picture theater admissions, indicated that specific proposals for removing inequities and discriminations in the imposition of excise taxes would be a part of the administration's recommendation to Congress to be submitted in January 1954.

Court Rules on Trip Leasing

Motor Carrier Trip Leasing. Following the decision of the Supreme Court of the United States on January 12, 1953 (see above), upholding the authority of the I.C.C. to regulate the duration of truck leases and the basis of compensation as between lessor and lessee, there was introduced into Congress H.R.3203, the effect of which would be to deprive the commission of authority to regulate truck operations in the respects referred to.

The bill was the subject of extended hearings before the House Committee on Interstate and Foreign Commerce. The principal proponents of the bill were the various farm and agricultural interests, including the National Grange, the National Council of Farmer Cooperatives, the National Farmers Union, and the American Farm Bureau Federation. Principal opponents of the measure included the I.C.C., the Teamsters union, railway labor, and the railroads. The trucking industry was divided on the question, a number of regulated carriers being opposed to the measure.

The "Safety" Bills

As a result of these hearings, the bill was favorably reported with minor modifications and passed by the House of Representatives on June 24. On the Senate side, the companion bill S.925 was referred to the Senate Committee on Interstate and Foreign Commerce and in turn referred to a subcommittee composed of Senators Griswold (chairman), Bricker, and Johnson of Colorado. The Senate subcommittee held hearings on the bill but had taken no action up to the time of the adjournment of the first session. What effect, if any, the action of the commission in the issuance of its orders of November 30, 1953, hereinbefore referred to, will have upon the course of this legislation remains to be seen.

Proposed "Safety" Bills. In April the Senate Committee on Interstate and Foreign Commerce held hearings on two "safety" bills. One of these was S.1401, commonly spoken of as the "Brake Bill." This bill would confer upon the I.C.C. authority to prescribe the specifications for power or train brakes and the rules, standards

and instructions for the installation, inspection, maintenance and repair of such brakes. It was opposed by the railroads as wholly unnecessary and as representing an unwarranted intrusion into the field of private operational management. The Senate committee on July 7, 1953, announced that it would take no action with respect to S.1401 during the course of the first session of Congress.

The second so-called "safety" bill is S.539, commonly referred to as the "Communications and Operating-Rules Bill." In the form introduced, S.539 would have amended Section 25 of the Interstate Commerce Act so as to confer upon the commission, in addition to its present authority with respect to signaling systems, authority to require installation of "telegraph, telephone, radio, inductive, and other wayside and/or train-communication systems." Additionally, the bill as introduced would have conferred upon the commission authority with respect to rules for the operation of trains.

This last provision was vigorously opposed by the railroads as preempting an essential function of private management in a field where divided responsibility would have serious harmful effects upon the safety and efficiency of railroad operation. Before reporting the bill, the Senate committee amended it so as to eliminate the operating-rules feature. The railroads also opposed the extension of the commission's authority under Section 25 of the act to include radio, telephone and telegraph communications systems. The bill in the form reported by the Senate committee omits any express reference to telephone and telegraph communication systems but would extend the authority of the commission to include "radio and other electronic devices." The amended bill was passed by the Senate on July 14, 1953, and referred to the House Committee on Interstate and Foreign Commerce. No action was taken by that committee prior to the adjournment of the first session.

THE ST. LAWRENCE WATERWAY PROJECT

his project has been before Congress almost continuously for the past 20 years and the year 1953 proved no exception. Six Senate and nine House bills calling for approval of

the St. Lawrence Project in one form or another were introduced in the first session of the 83d Congress.

During the past 20 years, a number of different approaches have been employed by proponents of the project. Since the project is international in character, it was first presented in the form of a treaty. Failing to obtain approval of the treaty, an executive agreement calling for construction of the combined power and navigation project by Canada and the United States jointly was negotiated in 1941. From that time on through the year 1952, practically all of the measures introduced in Congress sought approval of the executive agreement.

Following the defeat of one such measure on June 18, 1952, proponents adopted a new approach. Canada advised the United States that if approval were obtained for joint construction of the power project by separate entities in their respective countries, Canada would

undertake by itself to construct a 27-foot waterway through the St. Lawrence river. The United States agreed to this procedure and joined with Canada in an application to the International Joint Commission for approval of such a plan, Conforming to this plan, the New York Power Authority renewed its efforts under a pending application before the Federal Power Commission to obtain a license authorizing it to construct the U. S. share of the power project. On October 29, 1952, the International Joint Commission approved the Joint United States-Canadian application and shortly thereafter Canada renounced the executive agreement of 1941.

The proceeding before the Federal Power Commission was progressed and on July 10, 1953, the New York Power Authority was granted a license to construct the power facilities on the U.S. side of the International Rapids section. Petitions for reconsideration were denied by the Federal Power Commission on September 4, 1953. whereupon three parties to the proceeding sought review of the F.P.C. order in the United States Court of Appeals for the District of Columbia, Meanwhile, President Eisenhower on November 5 in an Executive Order designated the New York Power Authority as the United States entity to construct the power project. In the event the order of the Federal Power Commission is not upset in court, the New York Power Authority and an agency of the Province of Ontario will be authorized to proceed with construction of the power project and Canada will be authorized and obligated to construct a 27-foot waterway through the St. Lawrence river.

Why Duplicate Facilities

In view of this situation, there appeared to be no occasion for congressional action with respect to the waterway, but numerous advocates of the waterway in the United States are apparently unwilling to have Canada build the waterway alone and are seeking U. S. participation in the construction of the waterway project. The only point where the United States can participate in construction of the navigation works in the St. Lawrence river is in the International Rapids section. Accordingly, several bills were introduced which would authorize the United States to construct the canals and other works in the International Rapids section on the U. S. side of the boundary.

The two principal bills providing for the performance of this work were S.589 and H.J.Res.104, introduced respectively by the chairmen of the Senate Foreign Relations Committee and the House Public Works Committee. These proposals provided for the creation of a St. Lawrence Waterway Development Corporation to supervise construction and operation of the navigation facilities in the International Rapids section. The corporation was to have capital stock of \$5,000,000 subscribed to by the U. S. Government and authority to issue \$100,000,000 of its bonds for sale directly to the U. S. Government for the payment of both principal and public, but carrying the unconditional guarantee of the interest.

Hearings were held on S.539 before a subcommittee of the Senate Committee on Foreign Relations on April 14-16 and May 20-21, 1953. Witnesses representing the Treasury Department and the Bureau of the Budget objected to the method of financing and recommended substitution of direct obligations of the government for the guaranteed bond provisions. Adopting these suggestions and certain others having to do principally with the management of the corporation, the Senate committee reported out favorably on June 16, 1953, S.2150, which superseded S.589. This bill was not considered on the floor of the Senate during the first session, but from various announcements of the Senate majority leader, it appeared likely that the bill would be considered early in the second session.

Continued Pressure

Hearings on H.J.Res.104 were conducted by the House Committee on Public Works in June 1953, but no consideration was given to the measure in executive session,

Continued pressure for the passage of S.2150 is difficult to understand in the light of the fact that Canada is already obligated to build all of the works necessary for the completion of a 27-foot waterway through the St. Lawrence river, including works in the International Rapids section on the Canadian side. Until Canada should decide not to construct the portion of the waterway through the International Rapids section, the works authorized by S.2150 would merely constitute duplicate facilities which no one has claimed would have any justification. It is not at all clear that Canada will not continue with its plans for the construction of a complete waterway on the Canadian side in view of announcements by Canadian officials that construction of the entire waterway on the Canadian side would be more economical from the standpoint of construction and more efficient from the standpoint of maintenance and operation and in view of the further statement that Canada would prefer to construct the waterway alone. In this confused state, however, proponents continue to push for adoption of S.2150.

Mahaffie Act Changes

Other Developments. Other measures of interest to railroads, with indication of the last action given by the first session of the 83d Congress, follow.

Public Law 163. This measure, enacted on July 30, 1953, provided for the liquidation of the Reconstruction Finance Corporation and transferred certain R.F.C. functions to the Small Business Administration operating under the Treasury Department,

S.978 and H.R.2970. These two bills would amend Section 20b of the Interstate Commerce Act (Mahaffie Act) relative to terminating railroad bankruptcy proceedings. The Senate bill, proposing to facilitate consummation of railroad reorganizations by lowering the proportion of assents required of security holders for approval of a plan from three-fourths of each issue's principal amount outstanding to two-thirds of each issue's securities reported as voting, was reported with amendments from committee on April 10, 1953 (Senate Report No. 139). H.R.2970, the companion bill in the House, received no consideration during 1953 by the House Committee on Interstate and Foreign Commerce.

S.1976 and H.R.5305. These proposals would extend coverage of the Hours of Service Act to include crews

making repairs to signal devices and would lower maximum permissible hours of service for selected railroad operating personnel. The bills were referred to the respective Committees on Interstate and Foreign Commerce.

TRANSPORTATION STUDIES AND REPORTS

ederal User Charges Study. A major study released during 1953 was that of the Department of Commerce titled "Charges for Private Use of Federally Provided Transportation Services and Facilities," issued in July. This staff study, substantially compiled during 1952, covered developments in the field of federal aid to the various modes of transport, notably air, highway and water, since the early 1930's.

Defining a user charge as one "made to beneficiaries or users of services and facilities directly related to transportation and furnished in whole or in part by the federal government," the report concluded that it had long been the traditional policy of the federal government to provide aid to further development of the nation's transportation systems, but that since the 1930's, no general policy had been established to provide for the recovery of these expenditures.

Noting (p. 37) that at the present time rail transportation does not use or receive federal services, facilities, or grants in the same degree as do highways, airports, or waterways, the report recommended establishment of a general policy of user charges applicable to transportation services and facilities which are of special benefit to identifiable users. The report then discussed at length a recommended policy and procedure to follow in the development of a charges system.

Study of the Railroad Passenger Deficit Problem, 1953. This study, adopted by the National Association of Railroad and Utilities Commissioners in New York September 23, reported progress made during the year on eight recommendations contained in the 1952 study of like title. The report pointed to the improvements made in earnings of the Railway Express Agency and to the efforts of the carriers to improve service to the public, but concluded that the 1952 passenger service deficit of \$643,000,000, representing a decline of 5.7 per cent from the record high of 1951, could be considered as only token progress toward the solution of this "desperately serious problem."

Stating that 249 unprofitable passenger trains had been discontinued out of the 1,200 reported in the association's May 1951 special survey as not earning even their out-of-pocket costs, the committee called attention to the fact that on May 15, 1953, the railroads had pending 97 additional applications before state bodies to discontinue unprofitable passenger trains. In this connection, however, the committee expressed particular disappointment in their failure to secure support of railway labor in these endeavors and, as well, the slowness with which the various state regulatory bodies acted.

Among the difficulties found to exist was failure of the railroads in many instances to furnish adequate and timely information. To remedy this situation, the report included a 24-page appendix setting forth a "Standard Application Form" which the carriers might present to various state regulatory commissions when seeking authority to discontinue further operation of deficit passenger trains.

Government Reorganization Study. A survey conducted privately by Temple University and supplied to President Eisenhower shortly after his election in 1952 was made public on December 10, 1953. While a few of the 126 specific recommendations were embodied in the 10 reorganization plans which Congress accepted during the year, the sum total of the report was that the 70 independent agencies of the federal government be consolidated into 30 or fewer organizations.

Among nine specific recommendations were proposals that the executive consider setting up a single agency to handle all transportation matters, that the various diverse agencies handling flood and waterway projects be consolidated, and that the Post Office Department be reorganized to permit a separate appropriation for each deficit class of mail. In addition, the report proposed major revisions for the Department of Labor including a specific recommendation that immediate steps be taken to transfer the mediation service and duties of the Railway Mediation Board to the National Labor Relations Board.

LITTLE IMPROVEMENT IN THE COMPETITIVE SITUATION

he ability of competitive transport agencies to obtain increasing proportions of the nation's freight and passenger traffic was equally if not more detrimental to the railroads in 1953 than in recent years. Competition was especially severe from motor carriers and air carriers with expansion of service and facilities in both fields.

During the year significant developments occurred in the competitive field, some of which are outlined below. Motor Vehicle Registrations. The Bureau of Public Roads estimated on August 30 that motor vehicle registrations in the United States would reach a new high of 54,700,000 vehicles at the end of 1953. Automobile registrations would aggregate 45,035,000, an increase of 2.8 per cent over 1952. Truck and bus registrations combined, estimated at 9,674,000 for 1953, would be a corresponding increase of 2.4 per cent.

Truck Movement of Mail. At the end of October 1953, a total of 425 truck routes for handling short-haul mail were in operation, compared with 270 on June 30, 1952, an addition of 155 short-haul routes during the 16-month period. According to Assistant Postmaster General John C. Allen, approximately 17 new short-haul routes will be added during each month of fiscal 1954.

Air Lines to Move First Class Mail. Postmaster General Summerfield petitioned the Civil Aeronautics Board on September 3 to authorize movement of first class mail by air (at regular postage rate of three cents) between New York and Chicago and between Washington and Chicago on an experimental basis for a period of one year. Following the board's approval on September 21, the week of October 5 was selected by the Post Office Department to begin the experiment on a "space avail-

able" basis. Such movement is at the convenience of the authorized carriers, within a certain time limit, and will utilize space which would otherwise remain empty on regular flights. Under the plan four scheduled air lines—American, Capital, Trans-World, and United — will handle this type of mail at rates of 18.66 cents per ton-mile between New York and Chicago and 20.04 cents between Washington and Chicago, compared with rates of 45 cents for three of those companies and 53 cents for the other for handling regular air mail. Postal officials have reiterated that first class mail is not necessarily guaranteed air delivery since regular air mail, air parcel post, and air travelers will have priority.

Air Lines Competing

Since the plan went into effect, a group of 40 non-certificated (non-scheduled) air carriers have offered to carry first class mail between the three cities for only 15½ cents per ton-mile. On December 3, the Civil Aeronautics Board decided it had power to exempt non-certificated carriers from licensing requirements of the Civil Aeronautics Act, so that these carriers would not need to hold licenses in order to carry mail. However, on December 22 the C.A.B. declined to allow the non-scheduled air lines to carry mail.

The Civil Aeronautics Board on December 15, at the request of the Post Office Department, issued another order which permitted 14 local service air lines to handle first class mail over their scheduled routes throughout the country during the Christmas season. The board said that such action would expedite the transportation of holiday mail, and help cut down the government subsidy paid to these air lines.

Shifting the Subsidy

Service Mail Rates. The Civil Aeronautics Board issued an order on September 16 to all certificated air mail carriers and the Post Office Department, establishing service mail rates pursuant to the government's Reorganization Plan No. 10. Under that plan the postmaster general is responsible for "service" mail payments and the C.A.B. is responsible for "subsidy" mail payments. Effective October 1, 1953, the postmaster general will pay to each air carrier a fair and reasonable 'service" rate for the transportation of mail, which will be fixed by the C.A.B. without regard to a "subsidy" rate. The "service" rate will be fixed by the board in accordance with standards prescribed by Section 406 of the Civil Aeronautics Act, but without regard to the socalled "need" provision of Subsection (b) thereof. Under Plan No. 10, the board is authorized to fix the initial "service" mail rates to be paid without prior notice and hearing. However, such initial rates are thereafter subject to review and redetermination, after notice and hearing, upon petition of the postmaster general, or the certificated air carriers concerned, or upon the board's own motion.

The latest revision of the administrative subsidy separation report for both domestic and international air carriers was issued by the C.A.B. in September 1953. Revised figures and estimates were included for the fiscal years 1951-1955. The report established thee following

division of total mail payments between service mail pay and subsidy for domestic air carriers:

		Fiscal Years (thousands of dollars)				
	1951	1952	1953	1954	1955	
Service mail pay	\$27,490	\$33,744	\$35,367	\$36,354	\$38,148	
Subsidy	35,938	25,221	26,162	29,801	29,970	
Total mail payments	63,428	58,965	61,529	66,155	68,118	

Summarizing these statistics, it appears that for the five years combined, subsidy payments will have constituted 46 per cent of total mail payments to domestic air carriers.

Increase in Air Freight Rates. The Civil Aeronautics Board on October 21 increased minimum air freight rates by 25 per cent, simultaneously ordering the air lines to increase their charges accordingly as of November 20. The board specified that each carrier give at least ten days' notice to shippers before new tariffs are placed in effect.

The new minimum rates will be 20 cents a ton-mile for the first 1,000 ton-miles of a shipment, and $16\frac{1}{4}$ cents for each ton-mile thereafter. Below-minimum directional rates, authorized by special orders, are to be increased "so as to maintain the existing relationships."

Extension of "Air Coach" Service. Following a study of domestic "air coach" operations, the C.A.B. announced on October 5 an indefinite extension of such services at fares no higher than those now in effect. The board stated that such operations have been profitable and have contributed significantly to the growth in total air traffic while apparently causing little net diversion from other air services. Ten scheduled air lines operate coach service at fares ranging from 4 to $4\frac{1}{2}$ cents per mile, compared with a fare of 6 cents a mile on first-class air flights. The C.A.B. urged that present fare levels be applied to any proposed new coach services, but in no instance can they exceed 75 per cent of corresponding first-class rates.

Air Line and Waterway Policy

Review of Civil Aviation Policy. The Air Coordinating Committee was directed by President Eisenhower on September 23 to make a comprehensive review of United States civil aviation policy. In a letter to Robert B. Murray, Jr., chairman of the committee and under secretary for transportation, Department of Commerce, the President said that "the increasing importance of aviation as an instrument of national policy and to our national welfare makes it desirable that there be available to the government agencies, the aviation industry, and the public, a clear and comprehensive statement of the aviation policies of this administration." He also pointed out that it has been over five years since a broad review of U. S. aviation policy was completed and many events of major significance have occurred in the interim. The committee announced on November 6 the specific items to be considered in its survey.

Inland Waterways Corporation Sold. The Department of Commerce on July 24 announced the sale of Inland Waterways Corporation to the Federal Waterways Corporation, a newly formed subsidiary of the St. Louis Shipbuilding & Steel Co. In addition to the sale price of \$9 million, the government retained quick assets of the barge lines which, after deductions of current liabilities.

should net approximately \$2,700,000 in cash and accounts receivable. In announcing the signing of the sales contracts, Secretary of Commerce Weeks said the sale is "good business" for the taxpayers as the Inland Waterways Corporation, from 1939 to 1952, accumulated losses of \$9,749,000, losing money in 12 of those 14 years.

In acquiring the barge lines, the Federal Waterways Corporation agreed to continue common carrier services for less-than-bargeload and less-than-carload shipments in a manner substantially similar to the services rendered by the Inland Waterways Corporation. The agreement requires the new company, among other things, to maintain such joint tariffs with rail carriers as shall make generally available the privileges of joint rail and water transportation upon terms reasonable and fair to both rail and water carriers, maintenance of reasonable and fair joint tariffs with motor carriers whenever feasible in the promotion of transportation service, and arrangements for interline traffic with other transportation services.

Federal Barge Lines, Inc.

The certificate of incorporation of the Federal Waterways Corporation was later amended to change the company's name to Federal Barge Lines, Inc.

In an order dated September 14, 1953, the Interstate Commerce Commission granted Federal Barge Lines, Inc., temporary approval to exercise and control the operating rights and properties of the corporation for a period of 180 days. The purchase was authorized by a commission order dated December 3, 1953, and must be consummated on or before March 14, 1954.

Gas Pipeline Authorizations. The Federal Power Commission during the first six months of 1953 issued certificates authorizing construction of natural gas pipeline facilities designed to add more than 2½ billion cubic feet of daily delivery capacity to the nation's transmission systems. Authorizations during the six-month period included 4,891 miles of pipeline, and covered new facilities having a total estimated construction cost of \$549 million. These projects, when completed, will serve 69 cities of 50,000 population or more in 19 states and the District of Columbia, as well as numerous smaller communities.

Federal Aid Continues

Oil Pipeline Construction. The Petroleum Administration for Defense estimated in June that if construction remains on schedule a record of 10,000 miles of new pipelines will have begun carrying crude oil and products during 1953. This estimate includes 4,500 miles of product lines, 4,500 miles of principal crude oil lines, and 1,000 miles of crude oil gathering lines.

Highway, Air, and Waterway Appropriations. Fiscal 1954 appropriations provided substantial expenditures for the benefit of competitors of the railroads. Appropriations for the Department of Commerce (Public Law 195) included approximately \$139 million for the Civil Aeronautics Administration and its various air transport activities, and \$475 million for the federal-aid highway program of the Bureau of Public Roads to re-

main available until expended. Public Law 413 of the 82nd Congress authorized federal-aid highway appropriations of \$575 million for each of the fiscal years 1954 and 1955. The Civil Functions Appropriations Act (Public Law 153) approved July 27, carried 1954 appropriations of \$421.7 million for rivers and harbors and flood control, of which \$278.7 million was for general construction, \$79 million for operation and maintenance, \$51.4 million for Mississippi river and tributaries, and \$12.6 million for general expenses and investigations.

WHAT'S THE OUTLOOK FOR 1954?

W

hat the immediate future holds for the railroads depends in part upon the course of general business activity during the next 12 months, in part upon the outcome of wage

negotiations pending at the year's outset, in part upon developments in the field of competition, and finally upon the carriers' financial ability to carry forward their continuing capital improvement program.

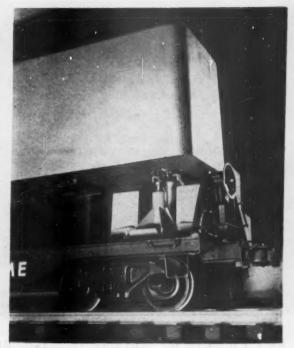
While firm answers cannot be given to these questions at this time, developments to date with respect to each of them indicate a pattern. Industrial production in the United States, as measured by the index compiled by the Federal Reserve Board, showed substantial increases over 1952 in each of the first eight months of 1953, small increases in the next two months, and decreases in the final two months of the year. Barring unforeseeable developments, the trend line of general business activity in 1954 seems destined to stay below that of 1953 throughout the year, although few observers look for other than a moderate spread between the lines for the two years. The consensus seems to center around a drop of 10 per cent in 1954, with a minimum of 5 per cent and a maximum of 15 per cent. The pattern may become more clearly defined after returns for the first quarter of 1954 are in hand.

In air agreement with the Brotherhood of Railroad Trainmen dated December 16, 1953, covering about 10 per cent of all railroad employees, a wage increase of 5 cents per hour above existing levels and an additional week's vacation with pay after 15 years of service were granted. While agreements with other railroad labor organizations are in various stages of collective bargaining, the agreement with the B.R.T. is at least indicative that railroad payroll costs will be relatively greater in 1954 than in 1953.

Growth in competitive agencies of transport continues. While it is hoped that some of the flagrant inequities presently existing will eventually be eliminated, progress toward that goal in 1954 may be slow.

One solid prediction that can be made with respect to the railroads in 1954 is that they will be more efficiently and economically operated than ever before. Nine billion dollars in the form of capital improvements have been ploughed into the railroad physical plant during the past eight years, transforming a war-weary industry of 8 years ago into the finest transportation system the world has ever known. The future of the railroad industry rests in very considerable measure upon the ability of the carriers to continue such capital work.





1953—THE YEAR IN PICTURES . . .

Panamericana and Piggyback

A glance over the events of 1953 puts the coming year in the light of great promise as technological improvements and new achievements in operating efficiency and economy further fortify the railroads' position

By ARTHUR M. COX, JR.
Western News Editor

It would be foolish to characterize the new year as one of "sweetness and light." There are too many disturbing factors, both at home and abroad, with which the railroad industry may have to contend — perhaps at a moment's notice. Yet one cannot look at the stream of new tools and new ideas that originated within and without the industry last year without gaining confidence that a winning combination may be at hand. And one cannot review what the industry itself has accomplished in 1953 without meeting the inescapable conclusion that there exists the "know how" to find it.

Therein lies the promise of 1954.

For highlights in progress in 1953, turn the page 🔷



NO QUESTION ABOUT IT-THE BIG STORY OF THE YEAR WAS ...

The Atlantic City



PAN AMERICAN RAILWAY CONGRESS delegates arrived by special train on June 22. They were greeted by Miss Railroads who presented this huge diesel locomotive key to the city to Atilio Cappa of Buenos Aires, acting president of the Congress. James G. Lyne, editor of Railway Age, W. T. Faricy, president of the Association of American Railroads (both at the left), Mall Dodson, representative of Atlantic City, and C. W. Floyd Coffin, president of the Railway Supply Manufacturers Association (not visible here) all took part in the welcoming ceremonics.



THE WEEK-LONG "BIG SHOW" got under way in the great exhibition hall with this special joint meeting of the Mechanical and Purchases & Stores divisions of the A.A.R. Delegates to the Pan American Congress and members of the supply manufacturers association were here too, as were members of the American Short Line Railroad Association. All heard Sr. Cappa's ringing tribute to American enterprise and its ". . stimulus of untrammeled, honest and healthy competition." The A.A.R. Electrical Section met later in the week.



Conventions



\$20 MILLION SHOWCASE.—Nearby were the track exhibits where members of the R.&M.A. set up a record-breaking array of the latest cars, locomotives and track equipment for all railroad men to examine.



HOURS OF STUDY and tons of literature were consumed at both the track and convention hall exhibits. For here were the tools to implement Mr. Faricy's promise: "Greater things are yet to be done by American railroads."

MEANWHILE TRAFFIC AND OPERATING MEN WERE CONSIDERING . . .



1953's SIZZLING QUESTION . . .

"Piggyback": How?—And When?

Put two railroad men in the same room and before long they will be talking about trailers-on-flats. Generally, if there is a "pro," he will be an operating man who will favor the service, while the traffic man will be reluctant, particularly if his main concern is rates.

Physically, "piggyback" is a simple idea. But its consequences are many, varied and difficult to foretell. The general public grabs at the idea as a chance to get heavy haulers off the highways. Shippers like it, because they welcome any innovation which promises additional, or better service.

Truckers appear to be in a quandary. The American Trucking Associations' Los Angeles convention last fall evidenced an odd mixture of fear, scorn and ill-concealed enthusiasm. In the convention's outer lobbies there was talk of little else.

From an engineering standpoint, piggyback is now quite feasible. Railway and motor carrier supply manufacturers have put their heads together and come up with what looks like practical equipment. They're not all alike, of course. Nobody expects to come up with definitive standards so early in so revolutionary a business. Several roads have evolved equipment ideas all their own and have tried them out in trailers-on-flats service for

their own rail-billed less-carload freight.

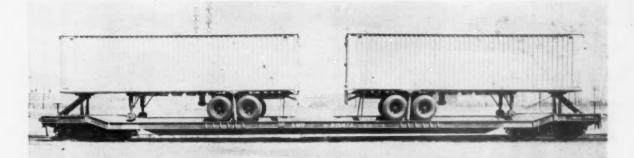
The big "ifs" lie not in the engineering field. Primarily they are matters of pricing, legality, investment risk and routine operation.

The real problems are: Who "controls" the traffic, and who gets how much of what rate charged the shipper?

If the chief value of piggyback to the economy is in cutting *local* terminal costs, the question arises whether the railroads cannot back up their own trailers to shippers' doors for carload freight, just as they now call for his merchandise offerings. If its chief value is in speedy movement, it appears that the railroads ought to be able to provide just as fast movement for their existing customers as successful piggyback would demand they provide for the truckers.

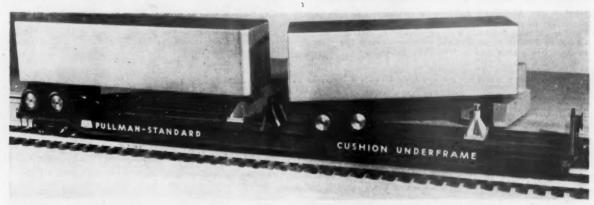
If piggyback is set up for the certificated common carrier truckers, will the railroads be able to withhold the same service from the contract carriers and from shippers providing their own trailers? And, if they do, what will happen not only to their own rate structure, but to that of the regular route motor carriers as well?

This year 1954 may hold the answers to these and many other piggyback questions. And who knows? Somebody may even come up with a better name for it!



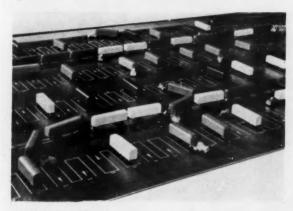
TWO TRAILERS must ride on a single flat car if the economies of piggyback are to woo motor common carriers to the rails by lower operating costs—and still

leave adequate earnings for the railroad. General Motors feels that this demonstration car measures up to the job, and many railroad men have examined it with interest.

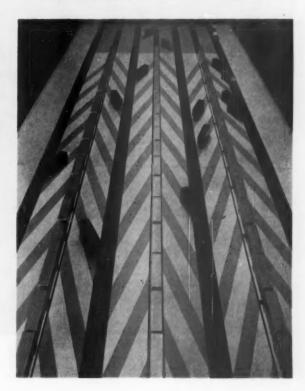


ANOTHER VERSION has been worked up by Pullman-Standard. Tie-down equipment for this car is currently being tested for security, impact control and simplicity of operation. Like the GM car, it is designed to operate

at near-passenger train speeds, for piggyback must provide overall schedules faster than by highway. Thus, while piggyback's gross earnings per car-mile may never be spectacular, its net earnings per hour might.



TERMINAL DESIGN becomes a major factor when trailer-on-flat car movement becomes volume business. "Circus" type end loading, while economical for handling a few cars, is awkward in large operations. Side loading, preferably with a specially-designed "trailer-switcher", frees the truck driver as soon as he delivers the trailer. It likewise permits "block" loading without regard to the order in which trailers are received off the road. The design above was worked out by Electro-Motive. The diagonal parking terminal (right) is a Pullman-Standard concept.



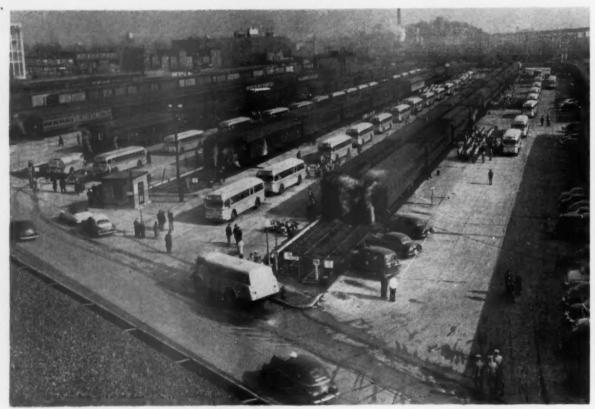


RAIL L.C.L. ALREADY MOVES in rail-hauled trailers on a number of roads. Motor transport units of the Southern Pacific, Chicago & North Western, Canadian National and Canadian Pacific began limited services during the year, to join Burlington and Cotton Belt pioneers.



VETERAN PIGGYBACKER—The New Haven—added another train to its expanding services, and ordered more flat cars. In its "20 Questions" it asked the Interstate Commerce Commission to clarify certain legal relationships between carriers.

Passenger Business Was Much in '53's News



PRESIDENT EISENHOWER'S INAUGURATION was a major operational exercise for eastern railroads—especially those directly serving Washington. More than 600 coaches, sleepers, parlor cars and diners converged on the city

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almost at once. More than 10,000 persons made their home in parked sleepers—2,100 alone at the Baltimore & Ohio's Eckington yard shown here. The railroads provided their guests telephone service and 24-hr. police protection.



BOY SCOUTS gave western roads an even heavier workout in July when some 50,000 scouts and leaders descended upon Newport Beach, Cal., from all parts of the continent. They came in more than 75 trains which deviated from

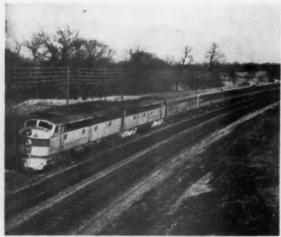
regular routes so that the boys could see national seenic wonders. It was one of the biggest non-military rail moves in history. Seldom had so many traveled so far. Their thirst and hunger posed unusual problems.



FAMILY FARES were put in effect by Western roads last fall. The plan varies somewhat from that on Eastern lines, but both have the same purpose—to brake the downward trend of passenger business.



ONE TROUBLE lies in the 15 per eent transportation tax. While air and bus passengers also pay it, private auto travel gets a real advantage. The outlook for repeal of this World War II measure is still uncertain.



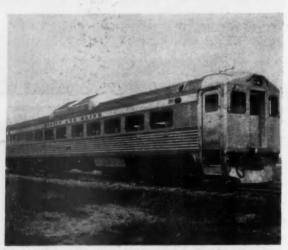
TRAIN OF THE YEAR?—If one were to be chosen, honors should probably go to the Burlington's "Kansas City Zephyr." Completely new from R.P.O. to observation car, it undertook a service that never before existed on the "Q."



COMMUTERS got more attention than is perhaps justified by the income derived from carrying them. New coaches were placed in service by the Long Island (above), the Canadian Pacific, and the Burlington, among others.



A NEW TALGO design has been developed by American Car & Foundry to overcome domestic objections to the original type (above) built for Spanish railways.



RDC CARS continued to find new jobs—and new names. The Boston & Maine is using nine to handle no less than 38 daily trains in and out of Boston.



DOME CARS have done much to hold back the general decline in passenger travel. They are proven traffic-getters—even on runs that are not considered "seenic."



DINING CAR COSTS may never be covered by the check the passenger picks up, but dining car officers generally feel the service is a priceless public relations asset.

With These "Plus" Factors ...



THE WILLINGNESS TO DO BIG THINGS.—The Union Pacific spent \$16 million to build this 42-mi. line bypassing Wyoming's tough Sherman Hill. Completed six months ahead of schedule, it enabled the UP to shave minutes and dollars from operations. Similarly, the Rock Island built 34 miles of new railroad in Iowa to turn in better performance at lower cost; the Norfolk & West-

ern literally moved mountains to improve its line in West Virginia; and the Terminal Railroad Association of St. Louis spent \$4.2 million to mechanize the handling of mail. At the moment, huge retarder classification yard projects are under way at Radnor, Tenn., on the Louisville & Nashville, and at Conway, Pa., on the Pennsylvania. These are but examples. The list is long.



THE POWER FOR "COMEBACK."—The Floyd river handed Sioux City and the Chicago & North Western an awful wallop with a flash flood last June. But hard, round-the-clock work restored service in just a few days.



THE CAPACITY FOR "EXTRAS."—Towermen and agents throughout the state of lowa are the backbone of the Air Force's civilian Ground Observer Corps. They promptly report all passing planes to local filter centers.

New Power ...

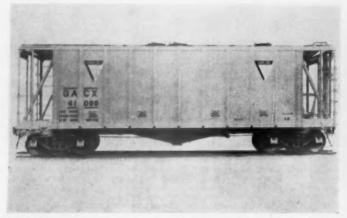


THE "TRAINMASTER"—Fairbanks, Morse & Co.'s new all-purpose locomotive toured the country on test assignments and proved equally at ease handling fast freights, sleepers, suburbanites, switching and humping.



GENERAL MOTORS announced an entire new line of Electro-Motive models, most of them built around a new, "beefed-up" diesel engine. The new general purpose GP-9 model offers 1,750 hp. and many new improvements.

New Cars . . .



"AIRSLIDE"—a new type covered hopper car for handling a wide range of bulk commodities—was displayed by General American Transportation. It is indicative of a marked trend toward more specialty cars.



SIESTA COACH—sleeping accommodations for coach passengers—is a new car conceived by the Budd Company, with seating or sleeping facilities for 40 passengers.

New Facilities ...



1,000-MI. SIGNAL PROGRAM completed by the Canadian Pacific; the use of centralized traffic control; these are more evidence of modern equipment meeting modern traffic demands.



RETARDER YARDS—such as the Milwaukee's facility at Bensenville, Ill.—cut deeply into handling time per car. Costly? Yes. But they are an answer to those twin bugaboos: terminal delays and damage claims. Some are being equipped for practically automatic operation.

Plus New Methods and Ideas . . .



DOPPLER'S EFFECT—commonly evidenced in the dropping tone of a rapidly-passing locomotive horn—has been harnessed electronically in this speed-measuring device which controls car retarders automatically.



BETTER TRAINING—for tomorrow's management as well as today's—has come through programs worked out with top colleges and universities. The teaching trend is away from paper work and toward group discussion.



NEW FRONTIER.—Information processing with new machines and techniques portends greater managerial "control." Benefits will accrue to customer and stockholder alike.



VERSATILE MACHINES are altering maintenance techniques in a manner both visually and financially spectacular. Savings have been duly appraised, but the general public has little understanding of the economies realized.

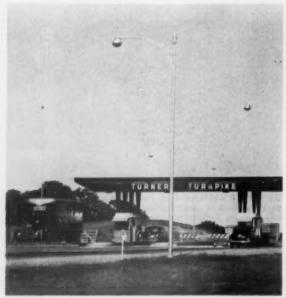


DAMAGE PREVENTION is an endeavor that may always remain a part of any transportation picture. Proper training for employees, plus studied use of control devices, remain the best means of cutting the claim bill.



MORE COMMUNICATIONS—"Grabbing numbers" with a walkie talkie and giving them to a voice recording machine in the yard office. Electronics at work making the job easier, more effective, less time-consuming.

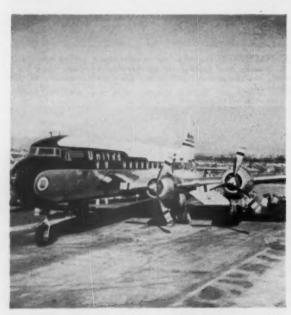
Railroads Will Face the Challenges of 1954 ...



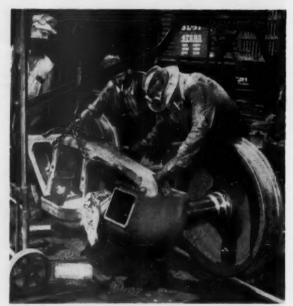
HIGHWAYS will continue to extract their toll of traffic both in passengers and freight. The trucker stands to benefit from the current "fever" for toll road construction. Generally, they lower his operating costs more than the price of the toll. And they make it possible for him to offer faster service.



WATERWAYS, it appears, will remain free of user charges for a long time to come. Thus private firms and "common" carriers alike will continue to enjoy shelter from the taxpayer's dollar. The Federal Barge Line passed into private hands where it will now sink or swim partially, at least, on its own merits.



AIRWAYS will gain greater stature. Their improved equipment and services—and recent good safety record—have impressed the public. Coast-to-coast service in eight hours, three-cent mail by air, both are now realities. Air coach services are growing fast and they may soon become the "basic" air passenger service.



LABOR DEMANDS—in the face of a widely forecast decline in general business—will make for "tough sledding" in view of increasingly severe competition for available business and the need for lower rates to hold traffic. With every union seeking benefits of one sort or another, the scramble is bound to be rough.

... and the Future with Confidence





Capital Outlays Over \$11/4 Billion

This 1953 expenditure for equipment and fixed facilities compared with 1952 total of 1/3 billion — 1954 appears likely to become sixth consecutive billion-dollar year

By WALTER J. TAFT
Washington Editor

Last year's gross capital expenditures of the Class I line-haul railroads aggregated more than \$1½ billion, off about 4.5 per cent from the 1952 total of \$1½ billion.

The outlook for 1954 is that it will become the sixth consecutive billion-dollar year, building the six-year total to nearly \$7½ billion.

The 1953 total of \$11/4 billion (more precisely \$1,250,-823,000) was an estimate based on actual expenditures for last year's first three quarters and forecasts for the fourth quarter, as reported by the railroads to the Interstate Commerce Commission. It was set out in the December issue of "Monthly Comment," by the commission's Bureau of Transport Economics and Statistics.

The fourth-quarter forecasts did not include returns

from three of the 130 Class I line-haul roads, but the three-quarter "actuals" are on the 130-road basis. The three roads which did not submit fourth-quarter estimates made capital expenditures totaling \$26 million in 1952's fourth quarter. If those three roads spent anything like that amount in 1953's last quarter, the final returns for last year should push its total some \$25 million above the \$1½ billion mark, i.e., to about \$1,275 million.

Meanwhile, the tentative 1953 total of \$1,251 million includes \$851.4 million for equipment and \$399.4 million for road. The latter represented an increase of about 4.4 per cent above 1952's road figure, but the outlays for equipment were off about 7.9 per cent.

Actual outlays during last year's first three quarters totaled \$932 million, including \$646.4 million for equipment and \$285.8 million for road. The estimated fourth-quarter expenditures of the 127 reporting roads were \$319 million, including \$205 million for equipment and \$114 million for road.

Selected Balance Sheet Items-Class I Line-Haul Railways

Yeur	Cash and Temporary Cash Investments (000)	Total Current Assets (000)	Total Current Liabilities (000)	Excess of Current Assets over Liabilities (000)	Total Long- Term Debt (000)	Total Corporate Surplus (000)
2000	*****	** *** ***	** ***	A	*** *** ***	45 000 171
10000	\$677,955	\$1,717,953	\$1,200,984	\$516,696	\$11,138,121	\$5,029,171
1001	592,071	1,510,975	1,162,170	348,805	11,174,816	4,577,730
1931	419,510	1,213,350	1,147,239	66,111	11,153,678	4,395,508
1932	379,136	1,063,271	1,130,731	67,460	11,247,777	4,094,531
1933	394,117	1,034,560	1,261,382	-226,822	11,112,005	3,900,883
1934	380,212	1,058,326	1,571,326	-412,995	11,041,472	3,714,302
1935	439,403	1,086,467	1,670,767	-584,300	10,821,788	3,507,220
1936	578,343	1,292,421	1,885,574	593,153	10,452,266	3,349,889
1937	392,486	1,143,990	1,937,830	793,840	10,686,814	3,126,391
1938	480,550	1,120,968	2,243,961	1,122,993	10,558,723	2,739,742
1939	578,359	1,292,705	2,555,903	-1,263,198	10,352,646	2,563,879
1940	680,400	1.442.142	697,200†	744,942	11,288,3111	2,474,249
1941	904,600	1.914.544	1,115,3201	799,224	11,186,063	2,666,625
1942	1.736.933	3,065,093	1,806,030	1.259,063	10.879,476	3,167,986
1943	2.807.275	4.497.065	2.923.078	1.573.987	10,462,770	3,748,508
1944	2,753,560	4.488.042	2.844.042	1.643.832	9,830,186	4,327,893
1945	2.545.909	4.345.830	2.108.245	2.237.585	9,286,001	4.608.846
1946	1.950.874	3 494 260	1.584.433	1,909,827	9.093.281	4.638.958
1947	1.908.887	3.575.914	1.942.772	1.633.142	8.831.806	5.174.106
1948	1.947.046	3.675.819	2 065 928	1.609.891	8.960.451	5.702.948
1949	1.570.636	3.067.146	1.696.558	1.370.588	9.154.027	5.949.064
1950	1.930.429	3 758 420	2 226 694	1.531.735	9 280 901	6.448.771
1951	1.744.705	3,702,505	2 262 436	1.440.069	9 600 139	6.837.036
1952	1.955.413	3 796 848	2 278 111	1.518.737	9.839.510	7.340.383
1000	1.927.547	3 748 474	2 231 487	1 516 087	(1953 totals are	
1953	1,721,391	0,140,414	0.001,101	1,010,701	(1300 totale all	contra av)

As for 1954, only the estimates for its first quarter (four carriers not reporting) had been submitted by the railroads when the December "Comment" was issued. They indicated that this year got under way with expenditures for road facilities 1.1 per cent above those

of last year's first quarter, but with expenditures for equipment off 23.6 per cent.

The road estimate was \$80.7 million, and it compared with actual expenditures of \$79.8 million by all 130 roads on road facilities during the first quarter of 1953.

Changes in Cash and Current Assets of Individual Large Railroads*

	Cash & Temp			Total Curr	rent Assets	Total Current Liabilities		Excess of Assets over	Total con	
	Investment	1952	Inc. or Dec. %	End of Sept. 1953	End of Sept. 1952	End of Sept. 1953	End of Sept. 1952	End of Sept. 1953	End of Sept. 1952	Dec.
AT&SF	139,469,179 17,838,058 55,371,502 17,109,203	146,063,364 22,377,123 52,433,264 14,852,074	$ \begin{array}{r} - 4.5 \\ - 20.3 \\ + 5.6 \\ + 15.2 \end{array} $	239,692,596 53,383,858 120,284,907 31,444,609	244,323,116 58,942,158 117,975,399 28,965,658	131,002,597 24,961,239 67,195,298 16,279,989	129,734,437 32,768,649 64,615,567 16,061,759	108,689,999 28,422,619 53,089,609 15,164,620	114,588,679 26,173,509 53,359,832 12,903,899	- 5.2 + 8.6 6 + 17.5
CofG	9,127,559	5,757,577	+ 58.5	16,544,975	14,274,446	7,826,292	7,121,425	8,718,683	7,153,021	+ 21.8
	3,909,853	4,577,858	- 14.6	19,167,446	23,783,452	10,396,976	14,731,550	8,770,470	9,051,902	- 3.2
	41,999,879	54,272,103	- 22.6	95,330,995	109,286,387	73,650,157	85,222,389	21,680,838	24,063,998	- 10.0
	2,019,770	2,505,597	- 19.4	8,084,206	8,038,994	6,817,733	5,990,090	1,266,473	2,048,904	- 38.2
C&NW	17,679,126	13,658,293	+ 29.4	57,520,933	50,925,660	39,408,481	36,667,200	18,112,452	14,258,460	+ 27.0
CB&Q	49,297,813	35,770,072	+ 37.8	94,063,009	84,411,337	57,745,523	54,637,475	36,317,486	29,773,862	+ 21.9
CGW	4,977,457	4,653,881	+ 6.9	9,316,850	8,204,728	7,601,774	7,194,917	1,715,076	1,009,811	+ 69.8
CMStP&P	32,954,550	31,238,449	+ 5.5	87,398,483	90,892,314	43,529,311	47,611,163	43,869,172	43,281,151	+ 1.3
CRI&P	32,318,312	29,571,337	$ \begin{array}{r} + 9.3 \\ - 23.3 \\ + 12.6 \\ - 18.2 \end{array} $	67,156,516	62,993,018	44,634,982	40,850,507	22,521,534	22,142,511	+ 1.7
CStPM&O	1,226,451	1,599,130		6,869,718	6,978,136	5,871,614	6,008,858	998,104	969,278	+ 2.9
D&H	16,716,409	14,838,411		25,315,397	23,256,290	6,207,415	8,011,963	19,107,982	15,244,327	+ 25.3
DL&W	12,770,527	15,601,062		31,898,705	30,864,797	13,342,794	13,223,892	18,555,911	17,640,905	+ 5.2
D&RGW DM&IR FJ&E Erie	32,555,504 17,613,372 11,445,824 25,580,737	26,358,035 4,164,269 7,873,246 20,008,643	+ 23.5 +322.9 + 45.4 + 27.8	48,472,512 27,642,744 15,950,886 52,531,201	45,291,261 14,926,482 12,566,163 49,808,566	21,381,330 25,191,774 17,986,951 37,537,378	19,325,426 17,438,877 16,379,677 35,756,715	27,091,182 2,450,970 -2,036,065 14,993,823	25,965,835 -2,512,395 -3,813,514 14,051,851	+ 4.3 + 6.7
GTWGN GM&OIC	1,885,544 52,310,808 21,771,438 61,545,326	1,759,454 44,452,374 26,565,069 47,120,649	+ 7.1 + 17.7 - 18.1 + 30.6	11,571,234 105,419,109 45,124,656 112,619,109	11,993,383 90,656,355 43,832,547 140,918,916	8,604,247 51,640,777 26,810,825 68,553,280	8,048,656 49,871,859 24,904,653 105,581,697	2,966,987 53,778,332 18,313,831 44,065,829	3,944,727 40,784,496 18,927,894 35,337,219	- 24.8 + 31.8 - 3.3 + 24.7
LV LI L&N MStP&SSM	15,013,293 4,481,700 45,607,355 6,866,994	13,621,612 9,261,529 35,189,965 6,974,721	+ 10.2 - 51.6 + 29.6 - 1.6	25,453,793 13,125,020 91,726,198 18,241,235	24,620,144 19,215,788 77,141,092 18,009,383	15,129,466 29,447,146 44,695,500 10,329,300	15,509,921 35,181,363 41,419,742 10,483,891	10,324,327 -16,322,126 47,030,698 7,911,935	9,110,223 -15,965,575 35,721,350 7,525,492	+ 13.3 + 31.6 + 5.1
M-K-T	19,298,383	16,945,051	+ 13.9	34,541,241	31,333,139	20,059,716	19,562,926	14,481,525	11,770,213	+ 23.0
MP	66,365,724	69,373,657	- 4.4	99,480,705	101,482,865	34,992,377	37,573,591	64,488,328	63,909,274	+ .9
NYC	63,664,219	38,843,083	+ 63.9	177,119,765	167,693,546	132,357,690	130,100,033	44,762,075	37,593,513	+ 19.0
NYC&StL	36,860,374	20,928,361	+ 76.1	60,578,713	45,377,860	38,538,036	34,384,224	22,040,677	10,993,636	+100.4
NYNHAH N&W NP PRR	13,042,393 32,791,871 20,221,338 164,059,054	14,160,401 38,118,517 19,033,704 140,471,702	$ \begin{array}{r} - & 7.9 \\ - & 14.0 \\ + & 6.2 \\ + & 16.8 \end{array} $	29,910,289 80,283,933 65,863,308 298,673,921	31,036,020 83,024,207 63,341,355 291,866,402	34,215,024 43,334,854 36,919,309 152,336,076	32,477,214 48,693,212 38,796,287 142,298,035	-4,304,735 36,949,079 28,943,999 146,337,845	-1,441,194 34,330,995 24,545,068 149,568,367	† 7.6 + 17.9 - 2.2
P&LE.	9,627,678	5,161,844	+ 86.5	18,375,321	14,967,476	15,900,501	12,011,567	2,474,820	2,955,909	- 16.3
Reading	16,392,606	16,187,350	+ .7	35,218,423	36,196,262	25,990,247	29,845,569	9,228,176	6,350,693	+ 45.3
StL-SF	37,090,086	35,280,566	+ 5.1	58,577,309	57,879,464	27,603,262	27,031,207	30,974,047	30,848,257	+ .4
StLSW	24,451,163	23,377,222	+ 4.6	33,199,141	33,336,713	17,975,203	20,287,746	15,223,938	13,048,967	+ 16.6
SAL	35,962,671	44,475,653	- 19.2	59,900,369	68,447,675	30,577,833	32,686,017	29,322,536	35,761,658	- 18.1
Southern	94,526,523	59,687,643	+ 58.3	134,494,248	108,094,938	78,699,376	72,542,416	55,884,872	35,552,522	+ 57.1
SPSystem	133,866,340	177,701,204	- 24.7	235,977,603	278,823,354	135,928,047	141,268,953	100,049,556	137,554,401	- 27.3
T&P	22,765,460	21,164,184	+ 7.5	37,243,906	34,624,198	15,680,180	15,533,399	21,563,726	19,090,799	+ 12.9
UPWabash	112,584,417	106,169,528	+ 6.0	224,931,092	215,362,741	123,265,085	118,889,314	101,666,007	96,473,427	+ 5.3
	25,632,237	20,050,663	+ 27.8	38,323,198	31,839,689	27,278,454	25,453,151	11,044,744	6,386,538	+ 72.9

^{*} Certain capital and other reserve funds are not included. † Current liabilities exceeded current assets in one or both years.



ANTICIPATED CAPITAL outlays for 1954—likely to exceed \$1 billion for the sixth consecutive year — will reach into all branches of railroad operation.

The estimated expenditures for equipment were \$168.2 million, compared with \$220.2 million. The four roads which failed to submit first-quarter estimates made expenditures of \$3 million for road and \$5.8 million for equipment in the first quarter of last year.

The prediction that 1954 will become the sixth consecutive billion-dollar year is bottomed on indications that the road program is on a level above \$400 million, while the equipment program is on a \$500-million-plus basis.

As to the road program, it need only hold to the 1953 level to be on the \$400-million basis; and authoritative year-end surveys indicate that it will climb to a higher level. Moreover, President William T. Faricy of the Association of American Railroads is on record with a statement that roadway and structures projects now planned will involve 1954 expenditures of "at least \$400 million."

Freight Car Order Prospects

As to the equipment program, the backlog of orders was low as this year got under way. But the \$500-million-plus forecast seems reasonable in that it contemplates purchases of but a few more freight cars than would be required to offset normal retirements. Such retirements run from 4,500 to 5,000 cars per month, so purchases of at least 5,500 cars a month, or 66,000 for the year, should be a reasonable expectation.

Assuming an average cost of \$5,600 per car, that would put the 1954 car program on a \$370-million basis.

That seems quite conservative, because it would mean a net gain in ownership of only 12,000 cars. To assume less would be to assume that there would not even be snail-pace advancement on the behind-schedule program for raising the fleet to 1,850,000 cars. This is still the official A.A.R. goal, with its date for achievement still officially set for the end of this year. The fleet is now some 75,000 cars short of the goal, so it would take an 11,000-car monthly program (allowing for retirements) to build to 1,850,000 by the end of the year. That is not in the cards, but half of it should be.

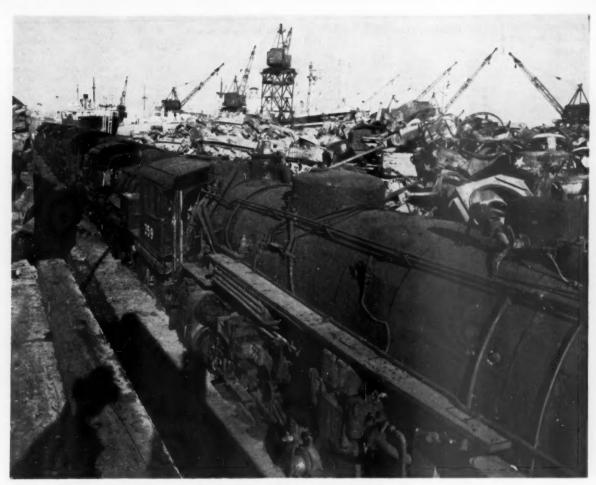
Another factor in the freight car situation (and in the locomotive situation, too) is the continuation of the fast-amortization incentive. This results from those provisions of the income-tax law which permit defense facilities to be amortized over a five-year period. Also, there are the urgings of Defense Transport Administrator James K. Knudson, who said recently:

"We will not reach this [1,850,000-car] goal in 1954 at the present rate of construction and based on the present order book. To the extent that we fall short we are gambling with the future."

As to locomotives, the dieselization program has passed its peak, but much buying is still in the offing. Railway Age has obtained from informed sources an estimate indicating that the 1954 program might well be on something like a 1,500-unit basis. At \$150,000 per unit, that would be a \$225-million program.

"An Act of Faith"

The carrying out of a billion-dollar capital expenditures program in 1954 will be "an act of faith on the part of the railroads," as A.A.R. President Faricy has put it. Competent appraisers of the situation still hold that it now takes annual net railway operating income of \$1½ billion to keep the industry on a healthy financial basis and thus in position to continue making sound capital expenditures for new and improved equipment and facilities. On this basis, last year's net railway operating income, at \$1,125 million, was \$375 million short.



IMPROVEMENT in the railroad scrap market has been forecast for early 1954. Old steam locomotives such as these are an important source of this type of material.

Railroad Purchases in 1953

Some prices are expected to ease off in 1954, although leveling off of volume of purchases is expected to continue because of decline in business activity

By FRED C. MILES

E xpenditures by U.S. railroads for all types of materials, including fuel, and commitments to purchase rolling stock, totaled \$2,361,628,000 in 1953. Freight-car orders last year fell slightly below the 1952 figure of 35,582, but purchases of motive power were higher. Orders for passenger-train cars were sharply lower than in 1952.

Tables accompanying this article offer comparisons between 1953 and 1952 purchases of fuel. crossties, rail, manufactured goods and other material, while one smaller table lists the dollar value of purchases of locomotives and cars from 1931 through 1953, compiled from information submitted to Railway Age for this Review and Outlook number.

Prolonged shortages of steel and other materials, along with the truce in Korea and the subsequent slowing down of the defense program, plus the general falling off of business activity in the latter part of the year, had a marked effect on railroad purchases in 1953. Loadings of revenue freight, though slightly higher in 1953 than in the preceding year, declined relatively from week to week, with few exceptions, during the final quarter of last year. Principal causes of the downward trend in loadings, which some forecasters think will continue through at least the first three months of 1954, were the curtailed output of defense materials, reduced production of such steel products as auto-

ANNUAL PURCHASES OF EQUIPMENT—CLASS I RAILROADS

Year#	(000)	Year#	(000)
1932	2,623	1943	\$247,000+
1933	5,857	1944	255,000
1934	66,850	1945	320,100
1935	35,696	1947	701,616
1936	240,594	1946	629,510
1937	194,153	1948	660,017
1938	74,006	1949	217,032
1939	108,838	1950	1,215,029
1940	264,943	1951	1,184,872
1941	414,690	1952	601,000
1942	325,000↑	1953	468,032*

*Preliminary estimates
#Estimated value of orders for new locomotives and cars
†Estimated value of orders for new locomotives and cars
builders and placed in service during 1942 and 1943

1953 Railway Purchases"				Cumulative
	Oct. '53	Nov. '53	Dec. '53	total, 1953
	(000)	(000)	(000)	(000)
Equipment*	\$ 13,885	\$ 38,525	\$ 72,625	\$ 468,032
Rail	10,114	9,000	8,500	114,260
Crossties	8,503	7,500	7,000	98,165
Other Material	105,484	92,500	85,500	1,209,403
Total from Manufacturers	\$137,986	147,525	173,625	1,889,860
Fuel	41,177	36,000	37,000	471,768
Grand Total	\$179,163	183,525	210.625	2,361,628

* Amount placed on order

1953 PURCHASES®

MANUFACTURED GOODS (Excl. Equipment and Fuel) Twelve Months Totals '53 And Other Years (000)			RAIL ive Months Tot Other Years		CROSSTIES Twelve Months Totals '53 And Other Years (000)			
Year	Amt.	% Change	Year	Amt.	% Change	Year	Amt.	% Change
1947	\$1,217,579	+17	1947	\$ 87,608	+30	1947	\$ 92,098	+7
1948	1,350,291	+5	1948	100,073	+14	1948	87,916	+12
1949	1.077,247	+32	1949	94,669	+21	1949	82,048	+20
1950	1,131,189	+26	1950	99,123	+15	1950	55,736	+76
1951	1,554,362	- 9	1951	102,961	+11	1951	94,879	+ 3
1952	1,279,091	+11	1952	77,676	+47	1952	101,314	- 3
1953	1,421,828		1953	114,260		1953	98,165	

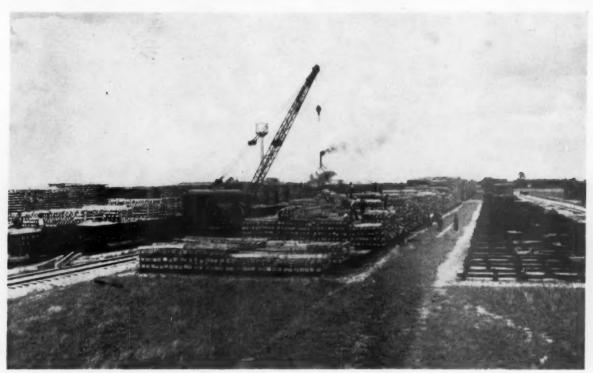
OTHER MATERIAL Twelve Months Totals '53 And Other Years (000)			FUEL ve Months Tot Other Years		TOTAL (Excl. Equip.) Twelve Months Totals '53 And Other Years (000)			
Year	Amt.	% Change	Year	Amt.	% Change	Year	Amt.	% Change
1947 1948	\$1,037,873 1,162,302	+17 + 4	1947 1948	\$691,630 833,040	—32 —43	1947 1948	\$1,909,209 2,183,331	-1 -13
1949	900,530	+43	1949	564,159	16	1949	1,641,406	+15
1950	976,330	+24	1950	608,719	-22	1950	1,739,908	+9
1951	1,536,522	-11	1951	621,497	-24	1951	2,175,859	-13
1952 1953	1,100,101	+10	1952 1953	538,659 471,768	-12	1952 1953	1,817,750 1,893,5%	+ 4

*November and December preliminary figures included, making 1953 total subject to revision.

1953 INVENTORIES

RAIL Oct. 1, '53 Compared to Other Octs. (000)			CROSSTIES 1, '53 Compared Other Octs. (000)		OTHER MATERIAL Oct. 1, '53 Compared to Other Octs. (000)			
Year	Amt.	% Change	Year	Amt.	% Change	Year	Amt.	% Change
1947	\$28,084	+55	1947	\$ 87,829	+26	1947	\$558,987	+10
1948	33,163	+31	1948	79,148	+40	1948	611,887	-
1949	37,475	+16	1949	96,515	+15	1949	581,945 *	+5
1950	38,478	+13	1950	82,609	+34	1950	511,420	+20
1951	42,182	+ 3	1951	88,333	+25	1951	701,572	-13
1952	32,682	+33	1952	110,388	denotes and	1952	654,816	- 6
1953	43,544		1953	110,674		1953	613,037	
	SCRAP			FUEL			TOTAL	
	1, '53 Compare Other Octs. (000)	* 0	1, '53 Compared other Octs. (000)		(1, '53 Compared Other Octs. (000)	
Year	Amt.	% Change	Year	Amt.	% Change	Year		% Change
1947	\$10,426	+68	1947	\$56,629	—13	1947	\$741,955	+12
1948	14,378	+22	1948	95,874	-49	1948	834,450	-
1949	16,053	+9	1949	63,534	-22	1949	795,522	+5
1950	14,008	+25	1950	50,875	- 3	1950	697,390	+20
1951	16,550	+6	1951	63,193	-22	1951	911,830	-9
1952	17,894		1952	56,835	-13	1952	872,615	- 4
1953	17,535		1953	49,243		1953	834,033	

†All total inventory figures taken from I.C.C. statement M-125 for the month indicated.



CROSSTIE PRODUCTION is expected to increase during the early months of the current year.

mobiles, farm machinery and household appliances, and a simultaneous decline in coal consumption. Iron ore shipments by rail, while very impressive, also were lower than in 1952.

Freight-car ownership of Class I railroads was higher on December 31, 1953, than at the end of each of the two preceding years. However, there were at the year end no indications that the rate of purchases of freight cars would be accelerated sufficiently to meet Defense Transport Administrator James K. Knudson's goal of 1,850,000 cars owned by July 1, 1954. The backlog of freight cars on order and undelivered on December 1, 1953, was 31,869, compared with 80,296 on January 1 last year and 123,947 on January 1, 1952. Similarly, motive power on order declined from 958 units on the first day of 1953 to around 650 units on January 1, 1954.

Prices Rose Steadily

Purchasers of materials used by railroads were confronted with steadily rising prices during 1953. According to the Association of American Railroads' index of average unit prices of railway materials and supplies, prices in 1953 (on the basis of June 1947, June 1948 and July 1949 prices equaling 100), reached or neared the highest levels ever attained in the period covered by the index, which dates back to May 1933.

On October 1, 1953 (all figures in the index are based on prices reported as of the first day of each of a year's four quarters), the average unit price of iron and steel products was 143.5; of forest products, 126; of "miscellaneous products," 121.5; and of fuel, 111.8. On January 1 last year, prices for the same categories of materials were indexed at, respectively, 132.9; 125.6; 121.0; and 108.2.

Despite these record, or near-record, high prices for railroad materials and supplies, a cautious optimism seems to prevail among railroad purchasing officers, many of whom told Railway Age they anticipate a general easing of prices during 1954. No forecasts were ventured as to the extent of the price decline, but there was general agreement that the peak has been reached and that any movement of prices would be, in most instances, downward.

It also seems to be the consensus that marketing of railroad scrap, an important source of railroad income, will improve early in 1954. This was thought to be particularly true of ferrous scrap.

Freight loadings in 1954 are expected to continue the decline which began late in 1953, and operating expenses, particularly wages, are thought likely to rise. As a result, forecasters see an "across-the-board" drop in railroad purchases during 1954. Figures recently released by the Interstate Commerce Commission's Bureau of Transport Economics and Statistics, based on reports from 126 Class I railroads, indicate that gross capital expenditures during the first quarter of 1954 are expected to be \$248,929,000, compared with expenditures of \$300,047,000 in the first three months of last year. Estimated expenditures for equipment in the first quarter of the current year were forecast at \$168,221,000, a drop of 23.6 per cent below the \$220,210,000 spent for equipment in the comparable 1953 period.



INVESTORS, as a class, showed little interest in railroad securities in 1953; Railway Age's own index of average prices of 20 representative railway stocks, which stood at 69.32 on December 29, 1952, had fallen to 57.55 at the end of 1953. Considering the comparatively high net income reported during the latter year, and increased dividend disbursements, reasons for this lack of investor enthusiasm probably lie in . . .

1953 A YEAR OF . . .

Little Activity in Rail Finance

Government policies and labor demands combine to keep industry in investors' "doghouse," despite improvement in overall financial situation—Dividend disbursements increased

By GARDNER C. HUDSON

News and Financial Editor, Railway Age

Railroads, said the Railroad Securities Committee of the Investment Bankers Association of America in its recent annual report, were not, last year, "important seekers of capital in our public security markets." The committee might legitimately have broadened its statement to say that there was, in 1953, comparatively little activity in any of the fields normally covered by the general term "railroad finance."

For that state of affairs there are two obvious, although directly contradictory, reasons. One, paradox-

ically, is the definite improvement in the industry's overall financial position which has taken place during the past two decades; the other is the poor credit position which the industry still occupies in the minds of many perhaps of most—investors.

Long-Term Improvement

The long-term improvement in the railroads' general financial position was well stated by William White, president of the New York Central, in a recent speech in which he said:

"We have, in the railroads . . . an industry in much

Tables accompanying this article prepared by Ann Ortlinghaus, of the Railway Age staff.



THE SUBSIDIZED COMPETITION to which the railroads are still subject, by highway, water and air; and . . .



EMPLOYEE DEMANDS, most of them still unsettled at the year's end, for higher wages and larger "fringe" benefits.

better financial condition than in 1930. Then railroad debt stood at about \$11.5 billion; now it is about \$8.5 billion, and a lot more of it today than in 1930 is short term equipment debt.

"In 1930 the fixed charges of the railroads were \$693 million; today they are about \$475 million. In 1930 fixed charges required 11 cents of the revenue dollar. Now they require 4½ cents.

"Probably the most dramatic fact in the railroads' financial situation is that in the seven years, 1946-1952, capital expenditures have totaled \$7.8 billion, while funded debt has not increased, but has in fact held

about even. With this gigantic program of additions and betterments under their belts, the railroads can now enter upon a period of reduced capital expenditures while continuing to realize—and in many cases increasing—the benefits from these improvements. As a result, the railroads are in the best physical condition of their history. The postwar betterment program, boldly conceived and executed, and conservatively financed, has built a transportation plant unmatched for versatility and efficiency."

The financial gains outlined by Mr. White are the end result of a combination of many factors—among

Representative Equipment Issues Sold in 1953

				Issue So	oid at	
Road	Maturity	Amount	Rate%	Price	Cost	Purchaser
Baltimore & Ohio, Ser. FF	1953-1967 1953-1967	\$3,000,000 1,500,000	314	99.3773 99.432	3.25	Salomon Bros. & Hutzler, et al. R. W. Pressprich & Co., et al.
Central of Georgie, Ser. Y.	1954-1968	5,460,000	35%	99.47	3.74	Salomon Bros. & Hutzler, et al.
Central of New Jersey	1954-1968	2,460,000	35%	99.6533	3.71	Halsey, Stuart & Co., et al.
Cheaapeake & Ohio	1953-1968	7,200,000	3	99,4743	3.08	Salomon Bros. & Hutzler, et al.
Signature a competition of the contraction of	1953-1968	7,950,000	314	99,4126	3.35	
	1954-1968	3,000,000	356	99.17	3.76	Halsey, Stuart & Co., et al. Halsey, Stuart & Co., et al.
Chicago & Eastern Illinois, Ser. J	1953-1968	2,100,000	356	99.08	3.78	Halsey, Stuart & Co., et al.
Chicago & North Western	1954-1968	8,400,000	312	99.03	3.69	Halsey, Stuart & Co., et al.
	1954-1968	3,930,000	354	99.529	3.86	Halsey, Stuart & Co., et al.
	1954-1968	4.185,000	33/4	99.67	3.84	Halsey, Stuart & Co., et al.
Chicago, Burlington & Quincy	1953-1968	7,050,000	312	99,667	3.30	Salomon Bros. & Hutzler, et al.
	1954-1968	5,400,000	27/9	99,439	2.96	Kidder, Peabody & Co., et al.
Chloago, Indianapolis & Louisville	1954-1968	900,000	334	99.744	3.83	Blair, Rollins & Co.
Chicago, St. Paul, Minn. & Omaha	1954-1968	1,170,000	436	99.15	4.70	Halsey, Stuart & Co., et al.
Delaware, Lackawanna & Western, Ser. L.	1954-1968	6,480,000	31/8	99.7603	3.19	Salomon Bros. & Hutzler, et al.
Denver & Rio Grande Western, Ser. S	1953-1968	3,300,000	31/4	99.157	3.26	Salomon Bros. & Hutzler, et al.
Georgia & Florida	1953-1963	717,000	4	100	4.00*	Reconstruction Finance Corp.
Georgia & Florida. Gulf, Mobile & Ohio, Ser. G,	1954-1968	4,500,000	336	99,1083	3.27	Salomon Bros. & Hutzler, et al.
Illinois Central, Ser. 36	1953-1968	6,000,000	3	99.673	3.05	Halsey, Stuart & Co., et al.
Ser. 37. International-Great Northern, Ser. EE	1953-1968	4,500,000	3	99.1459	3.14	Halsey, Stuart & Co., et al.
International-Great Northern, Ser. E.E.	1954-1968	3,000,000	31/4	99.52	3,35	Halsey, Stuart & Co., et zl.
Louisville & Nashville, Ser. M.	1954-1968	7,650,000	31/4	99.53	3.35	Halsey, Stuart & Co., et al.
Ser. N	1954-1968	6,765,000	3	99.722	3.07	Salomon Bros. & Hutzler, et al
Missouri Pacific, Ser. UU	1954-1968	3,500,000	314	99,57	3.34	Salomon Bros. & Hutzler, et al.
New York Co. Ser, VV	1951-1968	2,325,000	3%	99.529	3.86	Halsey Stuart & Co., et al.
New York Central	1954-1968	11,625,000	31/8	99.183	3.28	Salomon Bros. & Hutzler, et al.
	1954-1968	9,375,000	358	99.5707	3.73	Salomon Bros. & Hutzler, et al.
		*000,000	314			Bethlehem Steel Co.
New York, Chicago & St. Louis	1953-1967	800,000*	31/2	00.55	3.48	Bethlehem Steel Co.
New 1 ork, Catongo & St. Louis	1953-1967	1,050,000 3,150,000	3 3 3 4	99.53	3.84	Halsey, Stuart & Co. Halsey, Stuart & Co., et al.
New York, New Haven & Hartford	1954-1968	3,300,000	312	98,7806	3.73	Salomon Bros. & Hutzler, et al.
Pittaburgh & Lake Erie	1954-1968	3,225,000	3 14	99,2616	3.39	Salomon Bros. & Hutzler, et al.
Pennsylvania, Ser. AA	1954-1968	4,800,000	3	99.131	3.16	Halsey, Stuort & Co., et al.
Ser. AA.	1954-1968	4,230,000	31/4	99,6553	3.20	Salomon Bros. & Hutzler, et al.
Reading Ser II	1953-1968	4,350,000	316	99,428	3.59	Salomon Bros. & Hutzler, et al.
Reading, Ser. Ü. Ser. V. St. Louis-San Francisco, Ser. L. Seaboard Air Line, Ser. N.	1954-1968	3,420,000	312	99.65	3.56	Salomon Bros. & Hutzler, et al.
St. Louis-San Francisco, Ser. L.	1954-1968	5,175,000	33%	99,427	3.50	Salomon Bros. & Hutzler, et al.
Senhoard Air Line, Ser. N	1954-1968	4,350,000	3	99.778	3.04	Salomon Bros. & Hutzler, et al.
Southern Pacific, Ser. II	1953-1968	3,600,000	3	99.68	3.05	Halsey, Stuart & Co., et al.
Southern Pacific, Ser. II	1954-1963	10,000,000	314	99.333	3.29	Halsey, Stuert & Co., et al.
Ser. JJ	1954-1968	8,445,000	356	99.024	3.82	Halsey, Stuart & Co., et al.
Ser. K.K	1954-1968	5,250,000	33%	99,7113	3.45	Halsey, Stuart & Co., et al.
Sor. LL	1954-1968	5,925,000	3	99.681	3.07	Halsey, Stuart & Co., et al.
Texas-New Mexico, Ser. A	1954-1963	960,000	234	98.63215	3.06	First National Bank in Dallas and Fort Worth National Bank
Virginian, Ser. C	1954-1968	4,350,000	276	99.419	2.99	Kidder, Pesbody & Co., et al.
Wahash, Ser. E.	1954-1968	2,820,000	314	98.6143	3.37	Salomon Bros. & Hutzler, et al.
Wabash, Ser. E	1954-1968	2,010,000	336	99.138	3.54	Halsey, Stuart & Co.
The state of the s	x-00	210101000	17.0	27.12.000	40.10	Comment of Comment of the Comment of

^{*}Equipment notes.

Dividend Changes, 1952-1953

(Unless otherwise noted, figures apply to common stock)

	CUnion	s otherwise	noted, ngur	es appry t	o common stock)
	Dividen 1953	da Paid 1952	In- crease	De- crease	
Atchison, Topeka & Santa Fe	\$7.00	\$5.75	\$1.25	****	1953 dividend includes \$2 declared in 1953 but payable in January 1954.
Atlanta & West Point	6.00	4.00	2.00		
Baltimore & Ohio	1.00	.75	.25		
Hoston & Maine, 5% Pref	6.45	****	6.45		First since capital readjustment covering accumulations Jan. 1, 1949, to Jan. 1, 1953. Includes \$5.58 declared in 1951, but not paid, pending settlement of legal action by minority stockholders' group.
Chicago & Eastern Illinois. Chicago & North Western, 5% Pref	1.00	****	1.00	****	First since 1943.
Chicago & North Western, 5% Pref	3.25	2.55	.70		
Chicago Great Western, 5% Pref. Chicago, Rock Island & Pacific.	4.55	3.8216	.7214	22.00	All arreers paid up.
Chicago, Rock Island & Pacific	4.50	4.00	.50	2.6.0.8	
Colorado & Southern	1.00	****	1.00	****	First since 1930,
4% non-cum. 1st Pref	4.00	2.00	2.00		
4% non-cum, 2nd Pref	4.00	****	4.00		First since 1931.
Copper Range, 5% Pref.	2.50	3.50	****	\$1.00	
Copper Range, 5% Pref. Delaware, Lackawanns & Western Denver & Rio Grande Western, common es-	.50	.25	.25	****	
crow certfs	6.00	4.00	2.00		Plus 50% stock dividend payable December 30, 1953.
Detroit & Mackinac, 5% non-cum. Pref	2.00	****	2.00		First since 1921.
Fort Dodge, Des Moines & Southern	****	****	****	****	First dividend since reorganization, 10c. per share, payable January 5, 1954.
Gulf, Mobile & Ohio	2.50	2.00	.50		
Illinois Central	4.50	3.50	1.00		
Illinois Terminal International of Central America.	.20	.40	****	.20	
5% Cum. Pref	2.80	1.25	1.25		On arrears.
Kansas City Southern	5.25	5.00	.25	****	1953 figure adjusted for 2-for-1 stock split.
Lake Superior & Ishpeming	2.00	1.75	.25	****	
Lehigh Valley		****	****	****	First dividend since 1931 declared payable January 20, 1954, 30c. per share.
Louisville & Nashville	5.00	4.50	,50	****	
Minnes polis & St. Louis	1.50	1.10	.40		Plus 33½ per cent stock dividend, subject to approval by I. C. C. and stockholders.
Minneapolis, St. P. & S. S. M. Missouri-Kansas-Texas, 7% Pref. A. Nashyille, Chattanooga & St. Louis	.50	1.00	****	.50	
Missouri-Kansas-Texas, 7% Pref. A	5.00	****	5.00	****	On arrears—first payments since 1931.
Nashville, Chattanooga & St. Louis	4.00	3.50	.50	****	
New York Central	1.00	.50	.50		
New York Central	2.10	2.00	.10	****	1953 figure adjusted to include 10% stock dividend, to holders as of May 29.
New York, New Haven & Hartford, 5% Pref. A.	7.00	9.00		2.00	On arrears.
Norfolk Southern	1.70	1.55	.15		1952 figure adjusted on basis of stock after 2-for-1 split.
Pennsylvania	1.50	1.00	.50	****	
Pittaburgh & Lake Brie	4.50	4.00	.50		
St. Louis-San Francisco	2.50	2.00	.50	****	
Senhoard Air Line	7.50	5.25	2.25	****	1953 figure adjusted for 21/2-for-1 stock split.
Southern	5.00	4.00	1.00		1953 figure adjusted for 2-for-1 stock split.
Southern Pacific	3.00	2.8736	.1234		1952 figure adjusted on basis of stock after 2-for-1 split.
Southern Pacific	1.00	.66%	.331		1952 figure adjusted on basis of stock after 6-for-1 split.
Texas & Pacific	8.00	7.00	1.00	****	The second secon
Wahash	4.50	3.00	1.50		
Wabash Western of Alabama	10.00	8.00	2.00		
Western Maryland, 7% 1st Pref	15.00	14.00	1.00	****	1953 payments subject to approval of stock modification plan pend-
ti minut it transferred, t My fac state,	10.00	14.00	1.00	****	ing before I. C. C.

Summary of Railroad Receiverships and Trusteeships,

Roads Placed in Receiver- ship or Trusteeship		Roads Taken from Re- ceivership or Trusteeship*			Roads ed in Rec or Trust	Roads Taken from Re- ceivership or Trusteeship *			
Year	No. of roads	Miles	No. of roads	Miles	Year	No. of roads	Miles	No. o roads	Mile
1925	6	11,368	6	638	1940			6	3,675
1926	6	88	12	12,852	1941	. 1	25	9	5,031
1927	6	924	5	142	1942	. 4	961	7	2,230
1928	1	19		209	1943.	. 3	23		394
1929	3	634	5	562	1944		***	8	13,096
1930	4	4,752	2	1.048	1945	. 1	96	5	10.833
1931	19	5,195	2	102	1946.			7	4,832
1932	13	11.817	8	394	1947	. 2	396	14	11,535
1933	18	21,222	2	298	1948.	. 4	29	11	9,473
1934	1	81	2 8 2 2	4	1949		445		970
1935	16	29,018	5	436	1950			2	407
1936	4	8	3	122	1951				
1937	23	1.937	5 3 2	179	1952	. i	61	3	251
1938		6,194	R	290				-	
1939	3	733	8	401					
		1.00		307	1953	. 1†	265	2	**170

New Issues of Railroad Securities Offered for Sale in the United States, 1934-1953†

	(Amo	unts in thos	sands of dolla	rs)	
Year	Bonds	Stock	Railroad total	Total all industries	Railroad as per cent of total
1934	\$176,423		\$176,423	\$397,240	44.4
1935	126,031		126,031	2,331,630	5.4
1936	793,618	\$3,838	797,456	4,571,670	17.4
1937	344,257		344,257	2,309,524	14.9
1938	54,873		54,873	2,154,664	2.5
1939	185,474	233	185,707	2,164,007	8.6
1940	323,912		323,912	2,677,173	12.1
1941	366,313		366,313	2,666,887	13.7
1942	47,726		47,726	1,062,288	4.5
1943	161,179		161,179	1,169,692	13.8
1944	609,010	350	609,360	3,201,891	19.0
1945	1,453,517	504	1,454,021	6,010,985	24.2
1946	711,119		711,119	6,899,646	10.3
1947	285,680		285,680	6,576,824	4 3
1948	623,348		623,348	7,077,820	8.8
1949	459,982		459,982	6,051,550	7.6
1950	554,100		554,100	6,361,043	8.7
1951	330,021	5,066	335,087	7,741,099	4.3
1952	524,000	1,000	525,000	9,582,000	5.5
1953*	233,000		233,000	6,975,000	3.3

^{* 10} months total.
† Compiled by Securities and Exchange Commission

them, debt refunding operations; use of surplus earnings for debt reduction; voluntary and involuntary capital readjustments; and postwar inflation, which has increased the number of dollars the railroads take in without correspondingly increasing the number they have to pay out on fixed-interest debt. Because of these factors, most railroads have set their financial houses pretty well in order, or are in the last stages of doing so. The degree of order, like the circumstances which made it possible, naturally varies widely from company to company. But it is good enough, overall, so that the need, or incentive, to issue new securities or raise new capital for such purely financial objectives as the refunding or refinancing of older debt has been greatly diminished.

Credit Still Poor

Paradoxically, however, this strengthened financial position has not improved the railroads' credit to the point where the industry as a whole, or any substantial segment of it, can raise new capital for the purposes for which it is most needed-improvement of physical facilities. Money for new rolling stock, of course, is still available in necessary quantities, through equipment trust certificates and conditional sales agreements, although interest rates thereon have continued the upward trend begun in 1952, and noted in these pages a year ago. New capital for fixed facilities, on the other hand, has continued virtually non-existent; improvements in such facilities have had to be financed, as for many years past, out of such earnings as individual companies were able to make after payment of operating expenses and taxes.

Reasons for this lack of investor interest in railroad stocks and bonds are not hard to find, nor do they vary from those which have prevailed in prior years. They are, simply:

- 1. Continued overregulation of railroads by government, on the now thoroughly discredited theory that railroads still have a monopoly in what is actually a highly competitive field;
- 2. Continued subsidy by government of the railroads' air, water and highway competitors; and

3. Continued uncertainty as to the cost of now-pending demands by railroad labor organizations for increased wages and expanded "fringe" benefits.

There have, to be sure, been some recent indications that air line subsidies, at least, may be reduced, if not eliminated, within the foreseeable future, by imposition of airway charges. But the effect of such charges is still indefinite. At best they would probably do no more than balance off the government's apparent desire to shift a large volume of railroad mail to planes (and trucks); and they would in no way halt the continuing flow of freight traffic from the rails to their non-selfsupporting road and water rivals.

Legislative action to correct regulatory inequities which had been hoped for in 1953 failed to materialize, and prospects for substantial action toward that end in 1954 do not now seem promising.

Disappointment in that respect, plus apprehension as to the demands of labor, were probably largely accountable for the decline in railroad stock prices which occurred late in the year; and for the fact that, after the year's first few months, there was virtually no market for railroad bonds.

Stock Changes

Despite its comparative quiescence, 1953, did, however, produce a modicum of financial activity, most of which can be considered as favorable to the industry's long-term financial position.

Five roads declared stock dividends during the year, while an equal number split their stock without increasing their total equity capitalization. The stock dividends included one of 50 per cent by the Denver & Rio Grande Western, involving 193,4781/2 new shares of \$100-par common stock to be distributed to stockholders on the basis of one new share for each two held, plus 388,2491/2 additional shares to be used in converting outstanding preferred stock to common; and one of 10 per cent by the New York, Chicago & St. Louis, involving 185,-699 new \$20-par shares, with a market value of approximately \$42.50 each (at time of issuance), to be distributed on the basis of one new share for 10 held. Toward the close of the year, Minneapolis & St. Louis

^{*}Prior to 1938, these figures covered foreclosure sales only.

1Sacramento Northern.

**Includes Port Angeles Western, abandoned.

For years prier to 1920, see Railway Age, January 15, 1951, page 177.

directors authorized, subject to approval by stockholders and the Interstate Commerce Commission, a stock dividend of 33 1/3 per cent (one new share for each three held).

Even more spectacular, though of less importance to the security-owning public, were declarations of 400 per cent stock dividends (four new shares for each one held) by two comparatively small but wholly debt-free railroads-the Class I Atlanta & St. Andrews Bay and the Class II Mississippi Export. The A&StAB action was initiated in 1952 but not consummated until early 1953.

Stock splits were carried out by the Kansas City Southern, which divided its 210,000 shares of \$100-par 4 per cent preferred into 420,000 \$50-par shares, and its 510,000 no-par common shares into 1,020,000, still without par value; the Seaboard Air Line, which issued 2.449.475 shares of new \$40-par common stock to effect a 21/2-for-1 split of its former no-par common; the Southern, which split its 600,000 shares of \$100-par preferred into 1,200,000 shares of \$50-par, and issued 1,298,200 shares of new common for distribution to stockholders on a share-for-share basis; the Spokane International, which issued 142,320 shares of new no-par common stock for distribution to stockholders on a basis of five new shares for each one held; and the Toledo, Peoria & Western, which broke up its 50 shares of previously outstanding stock into 90,000 shares of \$40par value-an 1,800-for-1 split.

Two railroads initiated, and one expanded, stock purchase plans for officers and key employees. A Nickel Plate proposal provided for issuance under such a plan of up to 101,750 shares of common stock; the Western Pacific set aside 30,000 common shares for sale at 633/s to a selected group of its officers and employees; and the Lehigh Valley added 66,950 shares of common to the 36,000 made available on a purchase option basis in 1952.

Dividend Action; Bond Sales

Despite the belief of some investors, or their spokesmen, that railroad dividend policies are "unduly conservative," 1953 dividend action was one of the brighter spots in the railroad financial picture. Once again, as shown by one of the accompanying tables, the number of dividend increases far exceeded the number of reductions; while total dividend appropriations probably exceeded by about 12.5 per cent the \$336.7 million reported for 1952.

Individual dividend actions deserving of special notice included the following:

Boston & Maine-First payment since capital readjustment—\$6.45, on 5 per cent preferred, covering all arrears up to January 1, 1953.

Chicago & Eastern Illinois—First payment since 1943

on common-\$1

Chicago Great Western-Elimination of arrearages of

\$2.05 per share on 5 per cent preferred.

Colorado & Southern—First payment since 1930 on

Detroit & Mackinae-First payment since 1921 on 5 per cent non-cumulative preferred-\$2.

Lehigh Valley-First declaration since 1931 on common 30 cents, payable January 20, 1954.

Maine Central—Further reduction, from \$82.50 to

\$80.00 per share, in arrearages on 5 per cent preferred. Missouri-Kansas-Texas-First payments since 1931 on 7 per cent preferred A-\$5.

New York, New Haven & Hartford-Further reduction, from \$11 to \$9, in arrearages on 5 per cent preferred A.

Activity in the railroad bond market was at a low ebb in 1953; and most of what activity there was, was concentrated in the year's earlier months. Those months saw disposition of the following issues:

Detroit & Toledo Shore Line-In January, obtained I.C.C. approval for issuance of \$3,000,000 31/4 per cent Series A first mortgage bonds, due December 1, 1982, and actually sold in November 1952. Guaranteed by the Nickel Plate and the Grand Trunk Western, they were purchased at 99.47 by Kidder, Peabody & Co. and L. F. Rothschild & Co., and reoffered to the public at 100. Proceeds were to retire \$2,956,000 of outstanding first mortgage bonds, due January 1, 1953, and for other capital purposes.

Maine Central-In February, was authorized to sell \$17,000,000 of first mortgage and collateral bonds, due February 1, 1978, and to apply proceeds to redemption of outstanding bonds coming due in 1954, 1955 and 1960. The new bonds, bearing interest at 51/8 per cent, were sold to First Boston Corporation and 22 associates at 97.15, making the average annual cost to the road 5.33 per cent, and resulting in an increase in its fixed charges.

New York, Chicago & St. Louis-In March, obtained I.C.C. approval to sell \$10,000,000 of Series G refunding mortgage bonds, to pay off a collateral note of \$1,875,000 and provide additional working capital. The bonds were sold to White, Weld & Co. and eight associates at 98.9099, with interest at 35% per cent. Sale of the Series G bonds permitted cancellation of a like amount of Series E bonds, nominally issued in 1945, but mostly held in the company's

New York, New Haven & Hartford-In January, was authorized to sell \$14,000,000 of Series A Harlem River Division first mortgage bonds, maturing January 1, 1973, to retire Harlem River-Port Chester first mortgage 4 per cent bonds maturing January 1, 1954. W. E. Hutton & Co. and Kidder, Peabody & Co. and 16 associates bought the new bonds at 97.548 and reoffered them to the public at 98.673; with an interest rate of 41/4 per cent, the average annual cost to the railroad will be about 4.44 per cent.

North Pennsylvania-In January, the I.C.C. approved a late 1952 sale to Halsey, Stuart & Co. and five associates of \$6,000,000 of new mortgage bonds, due December 1, 1972, for use in retiring a like amount of outstanding bonds due January 1, 1953. Backed by a guarantee from the Reading, which operates the North Pennsylvania under lease, the bonds commanded a premium price of 100.217, with interest at 35% per cent.

The Southern, on the other hand, withdrew in June, because of "rather spotty market conditions," a January application for issuance and sale of \$10,000,000 of St. Louis Division first mortgage bonds, which had been considered as a further step in meeting some of the company's heavy near-future maturities.

As the year ended, however, there were indications of renewed activity in the railroad bond field. The Bangor & Aroostook, in December, asked the I.C.C. for authority to sell \$2,000,000 of $4\frac{1}{2}$ per cent first mortgage bonds, maturing July 1, 1976. These bonds, now held in the road's treasury, would provide most of the funds necessary for retirement of outstanding 4 per cent collateral trust bonds, most of which are held by the Reconstruction Finance Corporation; the approaching dissolution of the latter was doubtless a major factor behind the B&A's application, although the sale would also extend maturity dates, reduce sinking fund requirements, and simplify the company's debt structure.

The CGW has indicated that it plans to ask permission to negotiate private sale, without competitive bidding, of \$6,000,000 of collateral trust bonds, to mature in

1978, at not less than 99 and with interest at no more than 5½ per cent. These bonds, if sold, would be used largely to pay \$4,000,000 of temporary bank loans which the company negotiated after it rejected bids for similar bonds early in 1953 because of a projected interest

rate of 5.9 per cent.

The Illinois Central, also in December, announced plans for sale of \$27,000,000 of consolidated mortgage bonds, proceeds from which would be used, along with company funds, to redeem, on February 1, 1954, at 1021/2, \$34,743,000 of 43/4 per cent consolidated debentures due in 1966. Of the bonds, \$15,000,000, designated Series F, will be publicly sold; the other \$12,000,000 (Series D) will be sold, next April, to a group of insurance companies under authority granted, and agreement reached in 1952 (Railway Age, January 12, 1953, page 192). A short-term bank loan of \$12,000,000 would be floated to provide for retirement of the debentures, and this in turn would be paid off by proceeds from sale of the series D bonds. Upon completion of this proposed financing, all IC bonded debt will be included in a single consolidated mortgage of \$129,408,000.

Equipment trust certificates continued to be sold with no apparent difficulty, but, as would be expected from the smaller volume of equipment buying, the volume of this type of financing was less than in immediately preceding years; the total dropped from above \$250 million in 1951 and 1952 to around \$215 million. The trend of interest rates on equipments which became apparent in 1952 continued upward in 1953, as the

following figures show:

	1951	1952	1953
Lowest reported cost, per cent	2.46	2.78	2.96
Highest reported cost, per cent	3.48	3.46*	4.70
Number of issues costing:			
Less than 2.5 per cent	3	*****	*****
2.5 per cent-2.99 per cent	20	19	2
3 per cent-3.49 per cent	25	33	26
3.5 per cent-3.99 per cent	*****		17
4 per cent or over	*****	*	11

^{*}Two equipment notes sold to R.F.C. at 4 per cent †Plus one equipment note sold to R.F.C. at 4 per cent

Receiverships and Reorganizations

There was little change in 1953 in the list of railroads undergoing reorganization. The 120-mile New York, Susquehanna & Western concluded a 16-year period of reorganization in June, while the 265-mile Sacramento Northern (a Western Pacific subsidiary), in December filed a federal court petition for reorganization under the Bankruptcy Act. The 50-mile Port Angeles Western, which discontinued operation in 1951 and went into receivership in 1952, was authorized to abandon its line; and the 68-mile Huntingdon & Broad Top Mountain, in receivership since 1949, applied for abandonment authority, on the ground that no feasible plan of reorganization could be worked out.

Otherwise, the receivership list remains as published on page 192 of last year's Review and Outlook Issue, the largest companies on it, in order of mileage, being the Missouri Pacific system; Wisconsin Central; Florida East Coast; New York, Ontario & Western; Georgia & Florida, and Long Island. There was considerable activity during the year in connection with reorganization of most of these, and also of the 64-mile Boston & Provi-

dence and the 28-mile New Jersey & New York. In no case, however, is there assurance of an early completion of reorganization efforts.

The Missouri-Kansas-Texas and the Western Maryland, both hampered by dividend arrearages substantially exceeding \$100 per share on their preferred stocks, are seeking voluntary modifications of their capital structures, though the former's proposal is in temporary abeyance pending efforts to work out details to the satisfaction of all interested stockholder groups.

The 23-mile Aroostook Valley, in far northern Maine, retired its last remaining bonds on May 1, thus joining the select ranks of the country's debt-free railroads.

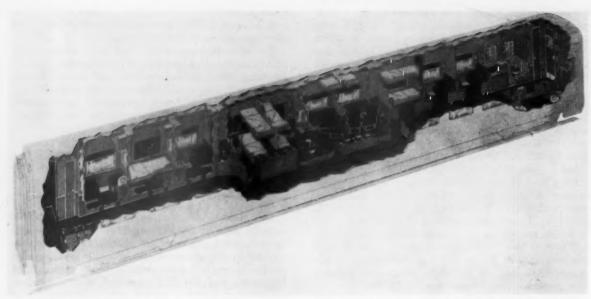
Control Changes

One trend which continued at an apparently accelerated pace during 1953 was that toward simplification of capital structures and elimination of corporate expenses by outright acquisition of subsidiary companies previously operated under lease or other arrangement. During the year, the I.C.C. approved, or at the end of the year had before it, the following acquisitions:

By the:	Of the:
B&O	Buffalo & Susquehanna; and by the B&S of two subsidiaries
B&M	Northern (New Hampshire)
CofG	South Western
CB&Q	Hannibal (Mo.) Union Depot
Erie	Sharon; Paterson & Hudson River
GS&F (Southern)	South Georgia; Live Oak, Perry & Gulf
IC ·	Alabama & Vicksburg; Canton, Aber- deen & Nashville; Vicksburg, Shreve- port & Pacific
PRR	United New Jersey Railroad & Canal and 14 other subsidiaries
Reading	Catawissa
StLSW	St. Louis Southwestern of Texas
TRRStL	St. Louis Merchants Bridge Terminal and six other subsidiaries
WM	Cumberland & Pennsylvania

The Rock Island was seeking regulatory permission at the year's end to acquire, at scrap value, for a three-year trial period, 106 miles at the north end of the 169-mile Wichita Falls & Southern, which has applied for abandonment authority. A new company, the Hartford & Slocomb, was organized to acquire and operate 20 miles of Central of Georgia line between Dothan, Ala., and Hartford; and another relatively new company—the Valdosta Southern, controlled by National Container Corporation—was authorized to acquire 27.4 miles of line from the Georgia & Florida.

While no changes of control were involved, stock relationships of some major companies likewise underwent some changes during the year. The Chesapeake & Ohio increased its holdings of New York Central to 800,000 shares, or about 12½ per cent of the total outstanding; the Pennsylvania and affiliated interests bought some large lots of Lehigh Valley, with the apparent object of increasing its ownership to more than 50 per cent; and the Reading enlarged its holdings in Central of New Jersey. The Lackawanna's application for authority to have its representatives hold two seats on the Nickel Plate board of directors was still pending as the year ended.



THE "S" TYPE SLEEPER-cither with 6 sections and 6 roomettes, or 12 roomettes-is fast becoming the "standard."

418 Passenger-Train Cars Ordered

Orders by U.S. railroads for 240 cars supplemented by orders for 178 cars placed in this country by Canadian railroads—Passenger departments prepare to meet stronger competition in fight for the passenger dollar

By JOHN 5. GALLAGHER, JR., and FRED C. MILES

Associate Editors

Domestic railroads ordered 240 passenger-train cars in 1953. Cars ordered for service in the United States, plus passenger-car orders placed by Canadian roads with car builders in that country and the U. S., are listed by purchaser in an accompanying table.

As in the past, analyses and summaries of passengertrain cars ordered and delivered from 1935 through 1952 are given in two additional tables. The detailed list of cars ordered in 1953 was compiled by Railway Age from data submitted by purchasers which were checked and amplified with reports received from the car builders through the cooperation and assistance of the American Railway Car Institute.

Passenger traffic and revenues during 1954 are expected to average about nine per cent below 1953, reflecting the reduced travel needs of the military services, a slight downturn in consumer and industrial spending, continued diversion of mail to trucks and planes, and the further discontinuation of unprofitable trains.

The long-range outlook is for a gradual improvement in standards of railroad passenger performance and service. New and improved equipment, better maintenance practices, more attractive and less costly dining car meals, and better planned schedules will make rail travel even more pleasant and more a "good buy." Domes, which help make the dullest trip more interesting, will make their first appearance in Canada this year.

The year 1953 was a significant one in the railroad passenger business. Although traffic and revenues were off about eight per cent, the industry proceeded to reorient and reorganize its passenger service staffs and facilities to meet the problems of the day more effectively, and to build an overall passenger service more attractive to the consumer and more economical to operate.

The trend is to combine passenger service responsibilities in one department under the direct supervision of a top staff officer. In these cases, all the different phases of passenger sales and service—car supply and distribution, schedules, station services, reservations, dining car operations, etc.—are consolidated in one department along with sales. In this way functions and responsibilities which were formerly divided between several departments are centralized for better all-over direction.

In their efforts to reduce service costs without undermining quality, several passenger departments have been giving stations and passenger car maintenance practices close scrutiny. Stations represent a large item of expense which produces little direct revenue, yet which can wield an important influence on the overall operation. Many stations have outlived their usefulness, and



ACTUAL ORDERING of new kinds of equipment-such as ACF's Talgo train-may not be too far off.

are now expensive to maintain and operate—their contribution to the health of the service as a whole is not in keeping with their costs. It is also recognized that "stop-start," "feast-famine" and careless car maintenance practices result in high costs and relatively low standards of quality.

In recent years the volume of travel has grown by leaps and bounds—and last year's travel market was larger than ever before. But the competition for the traveler's dollar has grown, too. First class air travel is now in some areas less expensive than first class rail travel, and air coach in some sections less expensive than rail coach. Although rail fares have never been lower—measured in terms of the buying value of the dollar—the relative prices of competing forms of transportation have dropped even more, and their quality has never been better.

More railroad men are recognizing that travelers must be "sold" the idea of rail travel. There are so many alternative methods of transportation that no one needs to travel by train who doesn't want to.

All forecasts indicate that consumer spending will decline slightly this year. This will, of course, be reflected in vacation and other forms of personal travel. A small decline in business activity may result in a slight drop in business travel. However, this may be more than offset by the increasing decentralization of industry—with its attendant need for more travel in order to maintain liason between different plants of the same company.

Indications are that the Post Office Department will continue diverting mail from trains to trucks in an effort to reduce its total handling and transportation cost. There is hope this might be partially offset by "piggy-backing" mail trucks between some larger centers. Also in prospect are some new rail routes and services designed to make rail mail service faster and more attractive to the Post Office Department.

Deliveries of passenger cars are running slightly ahead of last year, reflecting the increased number of orders placed on the books late in 1952 and during 1953. It is expected this building activity will continue, because all of the major passenger car builders now have enough orders on hand to keep their plants working regularly—but they all have capacity to handle additional orders.

The American Railway Car Institute reports that the average age of all of the passenger cars now in service in the United States is 27.1 years. It is estimated that 15,000, or about 37 per cent, of these are over 30 years old, and 26,000, or 62 percent, are over 25 years old. Inasmuch as the railroads have discontinued many of their money-losing local and branch line services, further attrition of the total fleet as a result of service abandonments is not likely to be important. With the close attention being paid passenger service costs, and the competitive needs for more attractive, comfortable equipment, it is quite likely that these older expensive-tomaintain cars will be replaced-though the orders will undoubtedly be spread over a considerable period. On this basis, the prospects for the railroad passenger car building industry appear good for some time.

Many Dome Cars

An interesting feature of this year's equipment orders is the unusually large number of dome cars being acquired by the railroads. At the year's end, it was estimated there were 77 dome cars of one variety or another on order, or just delivered.

There were in 1953 a number of small improvements in schedules and service throughout the country. A major improvement was the Burlington's inauguration of its "Kansas City Zephyr"—a new day train over a route which never before had fast, competitive service. It was matched by improvement in the overnight train which became the "American Royal Zephyr."

In the east, the Boston & Maine and the New Haven continued their programs of improving and expanding their local services by means of RDC cars. The New Haven; Pennsylvania; Richmond, Fredericksburg & Potomac; Atlantic Coast Line and Florida East Coast joined



AS ONE EXPERIENCED RAILROADER puts it "These RDC cars sure have sex appeal—the passengers love 'em." The New Haven, B&M and B&O have made wide use of RDC cars to expand and improve their services.

Passenger-Train Car Orders-For Service in the United States

Purchaser	No.	Class	Ft.	ngth In.	Con- struction	Seating Capacity	Weight	Date of Order	Date of Delivery	Builder
Atchison, Topeka & Santa Fe	6 25	Dome Dormitory Baggage	85	0	S. Steel	75	193,500	July November	MarApr.'54	Budd Amer, Car & Fdy.
Atlantic Coast Line	9	Sleeping	85	0	Steel		144,500	September	Nov. 54	Pullman-Standard
Baltimore & Ohio	3	BDC-I			S. Steel	89	118,100	June	September	Budd
	2	RDC-2			S. Steel	70	118,300	June	September	Budd
Bangor & Aroustook	2	Sleeping	85	6	Steel		146,200	April	Sept. '54	Pullman-Standard
Boston & Maine	4	Sleeping	82	10	Steel	2.2	145,000	May	Aug. '54	Pullman-Standard
	1	RDC-3	10		S. Steel	48	118,100	August	September	Budd Budd
Chicago & Eastern Illinois	24	RDC-1 Sleeping	85	· o	S. Steel Steel	89	112,800 152,900	October February	November April	Pullman-Standard
Chicago & Eastern Innois.,	9	Sleeping	85	0	Steel	**	144,409	September	Nov. '54	Pullman-Standard
Chicago & North Western	16	Suburban	85	ő	Alloy Steel	169	145,000	November	4th qtr. '54	St. Louis Car
Chicago, Burlington & Quincy .	2	Coach	85	0	S. Steel	148	132,400	October	Nov. '54	Budd
The second secon	2	Sleeping	85	0	S. Steel		135,000	October	Nov. '54	Budd
Chicago, Milwaukee, St. Paul										
& Pacific Chicago, Rock Island & Pacific .	2	Sleeping	85	0	Steel	***	138,000	June	Sept. '54	Pullman-Standard
Chicago, Rock Island & Pacific.	12	RDC-3	85 85	0	S. Steel Steel	49	120,000 143,000	June May	July 4th qtr. '54	Budd Pullman-Standard
Erio	12	Sleeping Sleeping	85	0	Steel	*.*	140,321	February	1954	Pullman-Standard
Florida East Coast	4	Coach	79	2	Steel	56	137,060	September	Dec. '54	Pullman-Standard
CHARLES COMMETTERS AND ASSESSED.	2	Sleeping	85	ō	Steel	11	145,247	September	Dec. '54	Pullman-Standard
Louisville & Nashville	ĩ	Sleeping			Steel	24	144,409	September	Nov. '54	Pullman-Standard
Nashville, Chatt. & St. Louis	2	Sleeping			Steel		*****	October	Dec. '54	Pullman-Standard
New York, New Haven &										
Hartford	11	Sleeping	79	2	Steel	* *	145,000	March	July-Aug. '54	Pullman-Standard
N - 11 - 15 - 16	10*	SleepBuffet	79	2	Steel S. Steel	20	145,000	March	Aug. '54	Pullman-Standard Budd
Northern Pacific	1000	Dome Coach Dome Sleeper	82 82	6	S. Steel	70 40	144,600 153,100	March March	July, '54 Sept. '54	Budd
	10	Parlor-Bar-Lounge	82	10	Steel	45	125,800	March	Aug. '54	Pullman-Standard
	2	De Luxe Coach	82	10	Steel	56	127,400	March	Aug. '54	Pullman-Standard
	6	Sleeping	82	10	Steel	22	139,300	March	Aug. '54	Pullman-Standard
Southern Pacific	15	Coach	85	0	S. Steel	44	127,100	February	1st half'54	Budd
	10	Coach	85	0	Steel	43	140,386	February	3rd qtr. '54	Pullman-Standard
Union Pacific	25	Baggage	85	0	Steel	5.5		March	2nd qtr. '54	Amer. Car & Fdy.
	30	Chair	85	0	Steel	44	*****	March	3rd qtr. '51	Amer, Car & Fdy.
	5	Dome-chair Dome-observation	85	0	Steel	* *	****	March March	4th qtr. '54 lst qtr. '54	Amer. Car & Fdy. Amer. Car & Fdy.
	5	Dome-dining	85	0	Steel			March	lst qtr. '54	Amer. Car & Fdy.
#One for the account of the Soci	kana		0.0	U	rapoct.	**		Maron	variate, na	remot. Cat or a day.

^{*}One for the account of the Spokane, Portland & Seettle.

*One for the account of the Epokane, Portland & Seattle, and four for the account of the Chicago, Burlington & Quincy.

Canada

Purchaser	No.	Class	Ft.	In.	Con- struction	Seating Capacity	Weight	Date of Order	Date of Delivery	Builder
Canadian National	30 1 57	Baggage RDC-3 Coach	76 85 75	0 0 434	Steel S. Steel Steel	48 76	******	November November December	July-Sept. December 1954	National Steel Car Budd Can. Car & Fdy.
Canadian Pacific	18 18 71	Dome-Bedroom Dome-Coach-Lounge Sleeping	85	0	S. Steel S. Steel S. Steel	75	153,200 152,100 137,500	June June June	3rd qtr. '54 4th qtr. '54 1954-'55	Budd Budd Budd
	18 30 18	Dining-Kitchen Coach Baggage-Dorm.	85 85 85	0	S. Steel S. Steel S. Steel	48 60	141,300 119,300 116,500	June June November	1st qtr. '55 1955 1954-'55	Budd Budd Budd
	3 1 5	RDC-1 RDC-3 R. P. O.	ši		S. Steel S. Steel Steel	89 48	113,000 117,000 130,000	July July April	October October 2nd qtr. '54	Budd Budd National SteelCar

in the operation of a new through train between Boston and Florida. This train—named "The Vacationer"—will operate during the winter tourist season only.

This year passenger improvements got off to a fast start with the Union Pacific's inauguration of its new streamline "Challenger"—a train designed primarily for the coach passenger—on a fast-schedule between Chicago and Los Angeles. At the same time the Chicago & North Western-UP streamliner "City of Denver" was completely re-outfitted with all new cars. During the year, the UP expects to equip its transcontinental streamliners "City of Los Angeles," "City of San Francisco" and "City of Portland" with dome cars.

On the Santa Fe big changes are in prospect with the inauguration of a new "San Francisco Chief" linking Chicago and the east with the Golden Gate by way of Bakersfield and the San Joaquin Valley. Domes will also be placed in service on the "El Capitan" and on the "Kansas Cityan-Chicagoan," supplementing those now in service on the "Super Chief."

The Northern Pacific's program for completely refurbishing its "North Coast Limited" is now well under way. Much new equipment—including several dome cars for each train—is being built for this train. Older cars are being extensively rebuilt and redecorated.

Domes are also in prospect for the Great Northern's streamline "Empire Builder."

Easily the biggest development of last year was the Canadian Pacific's ordering 173 main-line passenger cars plus 4 RDC cars. Included in the order were 36 dome

cars. The new equipment will be placed on main-line transcontinental trains.

In recent months the idea has been growing within the railroad passenger industry that the time is now ripe for something "new" or "different." Such a development—like the annual change in automobile models—would give the railroads' salesmen something to talk about, a "hook" upon which to hang promotional campaigns.

"Americans like change," is the way one passenger traffic officer puts it. He points out that in spite of heavy sales and promotional efforts of passenger departments in recent years, a large segment of the traveling public still thinks of railroad passenger travel as it was the last time they encountered it—during World War II, when railroad travel was anything but pleasant or attractive.

The development of something "new" or "different" helps erase the memory of the past, and places more emphasis on conditions as of today, thereby making it easier to sell more people on the advantages of rail travel. It is also true that the railroad industry itself—now that the diesel is pretty much commonplace—is in need of some attention-attracting development. Just as the first streamline trains dramatized the vitality of the railroad industry in the mid-1930's, passenger men are looking for a similar opportunity.

These conditions made it increasingly probable that such new developments as the Siesta Coach, the Talgo train, and "Train X" will receive more than perfunctory study. A few may actually be ordered sometime in the not-too-distant future.

Number and Classification of Passenger-Train Cars Ordered for Domestic Use (Carbuilder and Railroad Shops)

Year	Coach	Coach Comb.	Bag. & Exp.	Exp., Retrig. & Milk	Sleep- ing & Comb.	Parlor, Club, etc.	Dining	Postal & Comb.	Other	Inter- urban & M. U.	Self. Prop.	Troop Hosp.	Troop Sleep.	Troop Kitch.	Tota I
1952	107	0	80	0	126	25	27	17	0	120	70	89			661
1951	50	14	10	0	66	25 26	19	3	1	0	7	64	0	1	261
1950	21	0	38	0	1	0	0	10	1	0	31	0	0	0	102
1949	46	0	6	0	30	6	14	6	1	0	0	0.	0	0	109
1948	143	0	51	0	156	20	25	10	1	100	0	0	0	0	506
1947	132	0	22	0	72	36	19	29	4	0	2	0	0	0	316
1946	311	40	22	0	587	53	143	46	28	8	0	0	0	0	1,238
1945	296	17	134	25	510	84	98	54	67	8	0	100	1,200	400	2,993
1944	461	36	20	0	26	16	53	12	0	1	0	100	0	0	725
1943	14	2	3	0	0	0	4	12	0	0	0	10	1,200	440	1,685
1942	0	ī	2	0	0	0	0	0	0	1	0	0	0	30	34
1941	164	. 13	69	0	197	16	36	46	0	1	0	7	0	0	549
1940	220	26	B	0	53	6	48	13	2	3	0	0	0	0	379
1939	97	20	9	0	125	18	38	12	0	2	0	0	0	0	321
1938	85	28	42	0	86	10	15	10	0	0	2	0	0	0	278
1937	136	26 20 28 23	58	110	171	18	37	8	6	0	0.	0	0	0	567
1936	294	36 16	35	0	5	26	44	10	1	0	0	0	0	0	451
1935	14	16	7	55	18	6	10	7	0	0	0	0	0	0	133

Number and Classification of Passenger-Train Cars Delivered for Domestic Use

Year		Coach	Coach Comb.	Bag. & Exp. *	Sleeping & Comb.	Parlor, Club, etc.	Dining	Postal & Comb.	Other	Troop Hosp.	Troop Sleep.	Troop Kitch.	Total
1952.		28	19	4	22	9	11	T	0	23		4.	117
1951		89	4	34	14	27	6	5	0	0	0.	0	179
1950		368	11	60	380	33	61	43	8	0	0	.0	964
1949		190	9	16	517	36	125	27	13	0	0	0	933
1948		235	21	25	368	104	115	20	3	0	0.	0	891
1947.	***	412	57	119	67	16	117	72	1	0	0	0	861
1946	************	356	9	59	2	12	9	11	1	0	822	56	1,337
1945		3	0	13	0	0	0	10	0	193	368	344	931
1944	*********	0	0	3	0	0	0	5	0	17	558	420	1,003
1943		0	0	0	3	0	0	4.	.0	0	652	26	685
1942	********	111	2	82	157	2	18	22	.0	0	0	24	418
1941		201	10	2	49	22	35	20	3	7	0	0	349
1940		69	10	19	117	8	20	14	0	0	0	0	257
1939		98	12	29	80	18	37	2	0	0	0	0	276
1938		136	37	38	156	27	33	5	2	0	0	0	434
1937		299	56	71	33	20	37	10	103	0	0	0	629
1936		84	19	33	27	15	9	2	2	0	0	0	191
1935		107	25	0	0	14	2	1	56	0	0	0	205

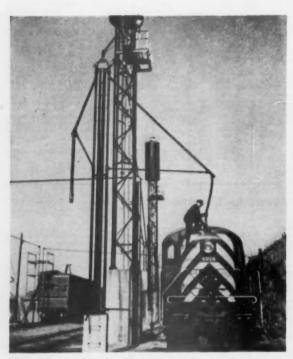
^{*} Including express-refrigerator cars. Source: American Railway Car Institute.

(Carbuilder and Railroad Shops)



EXCEPT FOR TOOLS for specific operations diesel repair shops follow the original two- or three-level arrangement with special attention to material handling facilities. Converted steam shops are demonstrating their ability to do an efficient job.

Shops and Shop Equipment—1953



TIME-SAVING FACILITIES are not all inside the shops. Good equipment for sanding, fueling, lubrication and washing cut down time.

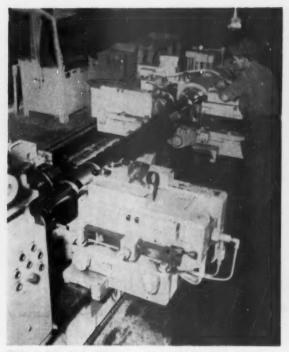
Ten years ago the Class I railroads of this country owned about 39,000 steam locomotives and a little over 2,000 diesel-electric units. At the end of 1953 the retirement of steam power had reduced the ownership of such locomotives to about 12,000 units and the acquisition of diesel-electric units had increased their ownership more than ten-fold to around 23,000 units. This complete turnover in the type of motive power imposed upon the railroads, in the short period of ten years, practically a revolution in shops and terminals and their equipment, the scope of which has probably not been equalled in any past period.

Because the job of maintaining a diesel-electric, whether it be in "back shop" or servicing terminal, is one largely of replacing worn parts, unit assemblies and large units such as trucks and power plants, the maintenance facilities are so designed and arranged that units may be cleared through the shop in a minimum of out-of-service time.

Overhead cranes handle such heavy parts as power plants and electrical equipment, and drop tables of modern design remove complete trucks and replace them in an hour or two. Wheels and axles, a repair problem of considerable magnitude, have assumed such importance in today's high-speed operation that for their proper maintenance and repair the roads have spent many millions of dollars in modern high-capacity machine tools capable of extreme accuracy.

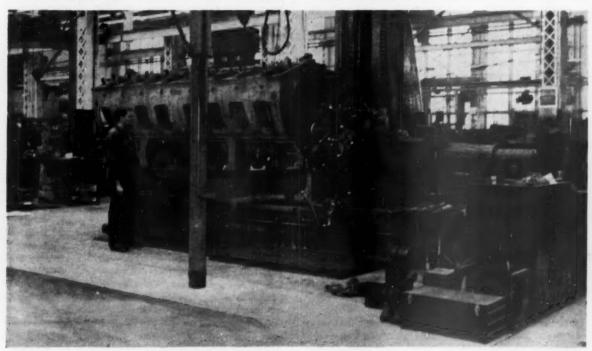


WHEEL WORK is so important from the standpoint of keeping locomotives in service that tread turning machines like this easily pay for themselves in a short time.

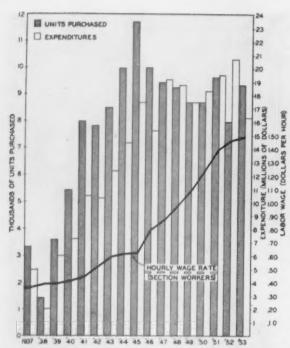


ONE OF THE MANY operations in accurate wheel and axle work is that of journal finishing, being done here on a modern high capacity tool.

By H. C. WILCOX Associate Editor



THE REBUILDING OF ENGINES requires many tools, one of the most versatile of which is the horizontal boring and milling machine shown here, line-boring the main bearing positions for a 16-cylinder V-type diesel engine. Crank shaft grinders are also being installed.



"AGE OF MECHANIZATION" is more than just a catch phrase when applied to railway maintenance-of-way work. Note from this chart how purchases of work equipment have increased since 1937. Perhaps there is a correlation between these purchases and the upward trend of hourly wages.

Statistics have shortcomings which may vary with circumstances. These shortcomings are particularly apparent with respect to the bare figures giving the volume of purchases in 1953 of machines and equipment used by railroad maintenance-of-way and structures forces. To see what is really going on it is necessary to get beneath the surface; when this is done some very interesting trends are unearthed.

To obtain a picture of these purchases the Railway Age requested all the railroads in the United States and Canada to furnish figures on their purchases of power tools and equipment used in maintenance-of-way work. On the basis of the replies received it is estimated that the railroads in the two countries purchased in 1953 a total of 9,500 units of work equipment for use in the maintenance and construction of their tracks and structures. For these purchases the railroads are estimated to have paid \$16,500,000. A chart shows how these figures compare with those of previous years back to 1937 when Railway Age first began to compile workequipment purchases. From the chart it is apparent that the total amount spent for work equipment in 1953 declined from the previous year in the face of a substantial increase in the number of units purchased. This is explained by the fact that several types of relatively inexpensive units were purchased last year in unusually large numbers.

The questionnaire requesting information on workequipment purchases drew reports from 336 railroads. This figure represents 74 per cent of the railroads receiving the questionnaire, and includes practically all of the larger companies. Of the railroads answering

DOLLAR VOLUME DOWN, BUT . .

Roads Buy More M/W Machines

Purchases of maintenance-of-way work equipment maintain fast pace as the railroads try to counteract high wage rates

By MERWIN H. DICK Western Editor

the questionnaire, 160 reported purchasing a total of 9,429 units of equipment. Of the Class I railroads reporting, 62 acquired more units of equipment than in 1952, 9 purchased the same amount and 30 acquired fewer units.

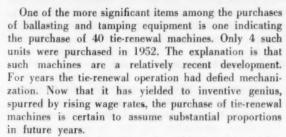
Story Behind Tamper Purchases

When we look at individual categories of work equipment, the most striking thing to be seen is the story told by the purchases of ballasting and tamping equipment. These show a substantial increase in the total number of units purchased as compared with the figures for recent years. The reporting railroads bought 1,988 pieces of equipment in this category. This compares with 1,347 such units reported purchased in 1952.

What appears to be an anomalous situation is revealed by a study of purchases of individual types of equipment in this classification. On the one hand the purchases of power tie tampers of the on-track type were the largest for a number of years, totaling 83 as compared with 54 in 1952. On the other hand there was even a more striking increase, numerically at least, in the reported purchases of power tamping tools of the types that are driven from compressors or generators. A total of 1,193 tools of this type were purchased last year, compared with 640 in 1952. Could these figures mean that the trend towards the use of the so-called production-type tampers for doing out-of-face work is being accompanied by a tendency to lean more in the direction of power-operated hand-held tampers for doing spot work?



TIE-TAMPING TOOLS of the hand-held power-operated type were purchased in unusually large numbers in 1953.



Purchases of equipment and machines used in laying rail also registered an increase last year. The reporting railroads bought a total of 889 units of this type, which compares with 812 such machines reported purchased in 1952. On the other hand purchases of grading equipment showed a slight decrease, dropping from 421 units in 1952 to 390 last year. A somewhat more active situation was presented by the purchases of cranes of all types. A total of 118 units in this category were acquired compared with 86 reported bought in 1952. Increases were registered in the purchases of crawler cranes, rail-handling cranes and locomotive cranes, but decreases occurred in the number of highway cranes, power shovels and draglines acquired.

Motor Cars vs. Highway Vehicles

There was no further significant change in the relationship between the purchases of motor cars on the one hand and highway vehicles on the other. The reporting railroads bought 1,342 motor cars during the year, which was only 12 less than was purchased in 1952. The acquisition of highway vehicles for maintenance use last year likewise showed little change, totaling 1,404 automobiles, trucks and highway trailers, compared with a total of 1,393 such units purchased in 1952. Annual purchases of highway equipment have now remained on about the same level for a number of years. This fact, coupled with the relatively stable market for rail motor cars, suggests the conclusion that perhaps a point has been reached where there will be little change in the future in the proportionate purchases of motor cars and highway vehicles.

An interesting sidelight on 1953 purchases is the reported acquisition by the railroads of a total of 1,241 motor-car tops. In the past such purchases have been



RECENT DEVELOPMENTS in track-laying equipment include the Nordberg Dun-Rite gaging machine.

so insignificant that few railroads have taken the trouble to report them. The sudden spurt in the number acquired in one year may be at least partially explained by the action of a number of states in requiring the railroads to provide tops, as well as other safety equipment, on all motor cars.

The various categories of machines mentioned do not include, by any means, all the many different types of power-actuated equipment and devices purchased by the railroads for use in maintenance-of-way and structures work. These purchases in 1953 included many other items, such as impact wrenches, wood borers, timber saws, pneumatic and electric tools of various types, derrick cars, jack hammers, paving breakers, paint-spray outfits, portable pumps, welding outfits and concrete mixers and vibrators. To provide power for the operation of electric and pneumatic tools the railroads procured last year a total of 250 power plants, including 124 air compressors and 126 electric generators.

Prospects for 1954

What is the outlook for work-equipment purchases in 1954? To gain the answer to this question, the railroads to which the questionnaires were sent were asked to give an estimates in dollars of the amount of work equipment they plan to buy in 1954. A total of 72 roads answered this question. Of these, 44 expect to spend Jess money for work equipment this year than last year, and 28 expect to spend more. These 72 roads expect to spend a total of \$7,600,000 for work equipment this year. In 1953 these same roads spent a total of \$9,100,000 for this purpose. Hence, the figure for this year represents a decrease of \$1,500,000 compared with 1953.

To accept this forecast of work equipment purchases at its face value would be a serious mistake. Substantial maintenance-of-way programs are being planned for the present year. If the work embraced in these programs is to be carried out with maximum efficiency, it will be necessary to employ power equipment wherever it is applicable. It is a fair assumption that wage rates will continue to go up during the coming year. The accompanying chart brings out only too clearly how work equipment purchases have expanded as wage rates have gone up. Therein lies the answer to the future of work-equipment purchases.



CANADIAN PACIFIC uses tabulating equipment to spot delays to foreign cars, or to any type of car in great demand, regardless of ownership.

Wanted: Potent Control Data

Financial and operating figures being demanded by railroad managements on a "current" basis — Tabulating equipment rentals soaring as use expands rapidly

By JOHN W. MILLIKEN
Associate Editor

Several events in 1953 point pretty conclusively to the fact that the railroads are taking a more constructive approach toward information handling, or "paperwork." Some of the carriers definitely have been taking steps, during the past few years, to make the amassing of figures lead to something more effective in the way of management controls. Other roads, where several years ago there was no active interest in these pioneer efforts, now really want to find out not only what's the result of those labors but also how it's being accomplished.

There is not yet everywhere, however, the same amount of attention being given to distilling information that is paid to the cost-cutting aspects of applying new techniques to work now done, in spite of the general agreement that all levels of railroad management need better information more quickly than ever before. The punched card and various mechanical tools still rate higher in the imagination of many railroaders as ends in themselves, it seems, than the idea of making paperwork activities mean more as management tools.

Early Reports for Management

A recent event which illustrates the railroads' desire for better control figures was the November 4, 1953, session of the recently formed Railway Systems and Procedures Association. At that meeting a panel of speakers discussed the "what" and "how" of early financial reports for management. (Railway Age, November 16, 1953, page 112.) This session was suggested by several R.S.P.A. members who apparently had been told by their top managements that "we want our figures earlier."

Those men and others heard representatives of two railroads tell how they get monthly financial figures for their managements by the fourth and fifth working days after the close of a month. From manufacturing industry a controller who had experience in several types of businesses told how various bottlenecks to procuring such figures had been overcome. Since the meeting, several railroads have sought more details from the two railroads—the Illinois Central and Chesapeake & Ohio—which made the presentations to the R.S.P.A. membership.

Similarly, at least two railroads are engaged in studies of operating cost control reports in an effort to make them more effective tools for such supervisors as superintendents, trainmasters, yardmasters, and agents. Both these carriers, the Canadian National and the C&O, realize if that such reports are to be effective they must be in the hands of supervisors before memory of the events "described" by the report has faded. Or to put it another way, they must be of some use in controlling current activities. Also, if these reports are to mean anything they must deal only with those activities which are the supervisor's responsibility to control.

The other desirable characteristic of such reports is a good yardstick against which to measure current performance. On the C&O, operating and accounting departments now are working to try to establish satisfactory yardsticks for yard and agency work standards. At the very least, spokesmen for these carriers feel, such reports should be in the hands of the responsible persons by the fifteenth of the month follow-

ing the one in which the money was spent.

It is just possible, too, that the idea of 100 per cent "accuracy" in some accounting jobs may be on the way out, especially since there is an increasing awareness that it frequently costs too much to obtain it. This is tantamount to saying that there is a growing realization that the railroads' main function is to provide service and make money, not to keep figures, and that one way to make money is to reduce expenses by eliminating things which hinder accomplishment of the main job.

Scientific Sampling

For example, the proposal has been advanced by the C&O that scientific sampling be used by railroads to set up new l.c.l. road-to-road "percents," following settlement of the Southern and Southwestern divisions cases, May 1, 1953. This proposal was not too enthusiastically received when first advanced, but it is apparent that this technique will get further consideration, both as applied to this specific case and others similar to it, and in a few years in many jobs it probably will be regarded as an indispensable tool. Its first major acceptance probably will be as an aid in auditing work.

In this space last year, it was predicted that two things might happen in 1953 which would help in their small ways to ease the railroads' paperwork burden. One of these, the so-called direct route plan for disposing of unneeded empty foreign non-direct connection box cars, did become a reality on July 1, and it has cut the home-route work of car service offices. (The primary objective of the direct route plan was to cut turnaround time on cars. However, automatic home routes have meant less paperwork in dis-

posing of surplus empty box cars.)

The other development predicted as at least a possibility was the adoption of the so-called Universal Station Code. This has not occurred. As set up by the accounting officers, tariff publishers and others, this proposal was met by some logical and rather strong objections. The accounting officers now are engaged in trying to meet some of these objections. Unless and until these differences are resolved the potential values of the code will go unrealized.

Also mentioned last year in the annual Review and Outlook Number as having some possibilities for helping to ease the railroads' paperwork burden was the organization of the Railway Systems and Procedures Association. To date, it is engaged in "getting set," and its potentials are largely unrealized as yet, for a number of reasons. Nevertheless, R.S.P.A. has made "starts" which may help reduce railroad paperwork

in some areas.

For example, R.S.P.A.'s workshop group on handling, by punch-card methods, the prorating of revenues from interline carload freight has set up an experiment which, should it bear fruit, will reduce considerably the amount of time and money presently involved in reauditing settlements made by the destination carrier. In fact, if a plan under consideration stands up under



PRE-PRINTED Pullman space coupons are one of the paperwork reducers the Pennsylvania is using at Pittaburgh, Pa., to eliminate delay in reservation handling.

rigorous examination, a large percentage of the divisions for settlements on recurring traffic movements will be "preaudited" rather than reaudited. Once these divisions have been verified as correct by the originating and other railroads participating in the movement, abstracts of the actual settlements can be spot-checked at the will of the roads receiving the "preaudited" documents. (Activities of these workshops were described in Railway Age of March 9 and July 13, 1953.)

Another R.S.P.A. workshop group undertook last summer (Railway Age, July 13) to tackle the job of simplifying methods of billing for freight car repairs. Several revised procedures were worked out which are on trial by some of the roads which participated in the sessions. One of these proposes the elimination of detailing on monthly bills information concerning repairs, where the cost of the item applied to the car is small. If it proves practicable, this plan should result in some billing economies, but just how large they might be it is much too early to say.

In 1953 the Disbursements Committee of the Accounting Division, Association of American Railroads, appointed a subcommittee to study disbursements in other industries. Such a study would seem to have much potential value to the railroads if actively pursued, for many of industry's problems differ from those of the railroads in degree rather than in nature. The committee plans to continue this study.



INCREASED TRACK CAPACITY was secured on the Missouri Pacific by signaling both main tracks for train moves both ways.



ABOUT 80 PER CENT of the meets are non-stop on Santa Fe single-track centralized traffic control which includes long sidings and special signal aspects.

Signal Construction

- ABOVE AVERAGE IN 1953
- FURTHER GROWTH IN 1954

By JOHN H. DUNN

Signal and Communications Editor

The new signaling placed in service in the United States and Canada during 1953 totaled 8,510 units, which is 366 units, or 4.4 per cent, more than in 1952, and 259 units, or 3 per cent, more than the annual average for the 11 years prior to 1953. Construction of automatic block, as measured by the number of signals, dropped from 1,378 in 1952 to 967 in 1953. Fewer power switches and car retarders were installed in classification yards in 1953 than in 1952, but this figure will show an increase in 1954, because several large yard projects are underway. However, these declines in 1953 in automatic block and retarders were more than offset by increased construction of other systems of signaling.

Centralized traffic control installed in 1953 included 3,481 power switches and signals, an increase over the previous record of 3,201 in 1947. The construction of new interlockings and additions at previous plants in 1953 totaled 1,983 interlocked switches and home signals, which was exceeded in only two of the previous 11 years. Likewise the installation of highway grade crossing protection in 1952, at 1,491 crossings, was exceeded in only two years, 1949 and 1950.

In 1953, the construction of new signaling systems continued at a high level, and further increases are in prospect for 1954. This is true because modern signal systems are an important aid in: (1) securing efficient utilization of diesel locomotives; (2) reducing train time between terminals without further increases in maximum speed; (3) expediting operations in classification yards; (4) reducing operating expenses by eliminating block offices and by consolidating the con-

trols of two or more interlockings; (5) avoiding the cost of rail renewals and continued expense of track maintenance on some sections by changing from double to single track with C.T.C.; and (6) improving the efficiency and reducing the operating expenses for highway grade crossing protection.

By concentrating major expenditures on the purchase of diesel locomotives for the past ten years, nearly all railroads have now acquired enough such locomotives to operate all trains on principal routes. The next objective is to install modern signaling to utilize these locomotives efficiently, by authorizing trains to keep moving without unnecessary stops, and at maximum speeds for a greater percentage of the miles between terminals, and also by being able to direct trains to depart from terminals when they are ready to go.

These objectives are being attained effectively, on extended sections of many railroads, by the installation of centralized traffic control. As measured by the number of power switches and signals, more C.T.C. was installed in 1953 than in any of the previous 11 years.

As compared with the practice of using timetables and train orders, the use of signals with C.T.C. to authorize train movements will save time on the road. For example, the Union Pacific reports that an installation of C.T.C. completed in 1953 on 217 miles of single track between Topeka, Kan., and Gibbon, Neb., is saving an average of a minute for each mile for every through freight train. On a 120-mile engine district this is an important factor in reducing the number of locomotives required.

COMPARISON OF ANNUAL SIGNAL CONSTRUCTION

	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943
Automatic block signals	967	1,318	1,189	1,133	1,974	1,711	2,259	3,078	2,350	1,539	1,690
Signals and switches At new plants. At rebuilt plants. At automatic plants.	1,006 826 151	864 508 133	879 405 116	1,150 633 106	863 864 132	1,074 565 80	837 408 83	1,529 993 132	910 940 88	851 687 62	1,498 760 55
Spring switches				-7-		-			-		
Spring buffer mechanisms Mechanical facing-point locks. Signals at spring switches.	162 84 256	177 70 317	163 58 780	979 110 - 578	242 73 455	264 107 516	356 107 491	554 248 707	764 341 991	382 115 553	448 88 498
Centralized traffic control						510		,0,	***	222	770
Power switch machines. Semi-automatic signals. Intermediate signals in C. T. C. territory.	680 1,845 956	597 1,512 852	396 1,153 587	430 1,309 674	496 1,428 590	565 1,725 738	1,810 853	453 1,385	633	596 2,141	1,775
Classification yards	,,,,				3,0	130	033	****	****	****	****
Car retarders	30	57	10	68	110	100	23	18	14	25	
Power switch machines Highway crossing profection Number of crossings at which new installations were	156	304	32	172	245	192	27	73	57	52	
made in year	1,491	1,435	1,406	1,573	1,571	1,432	1,088	800	403	268	206
			-			-	-	-		-	-
Totals	8,510	8,144	6,584	8,208	9,043	9,169	8,910	9,970	9,708	7,029	7,481
Miles of track. Number of locomotives or self-propelled cars	584 189	1,409 946	391								
Totals	773	2,355	420								

Because of the increasing costs of labor and materials, expenses for rail renewals and routine track maintenance are mounting rapidly, in spite of extensive use of off-track and on-track power machines. An off-setting procedure is to install modern signaling that will increase the track capacity so that all trains can be operated efficiently on existing tracks—thus post-poning the need for additional tracks or permitting the removal of one track where two or more tracks have previously been required.

For example, on extended sections of former double track on the Milwaukee, the Erie, the Southern, the Boston & Maine and other railroads, one main track has been removed, C.T.C. being installed on the remaining track to handle all trains efficiently. Where three or more main tracks were in service, some roads have removed one track, and have secured the track capacity required by installing signaling for train movements in both directions on one or two of the remaining tracks. To increase the capacity of existing double track,

several railroads, such as the Rock Island, the Missouri Pacific, the Atlantic Coast Line, the Burlington and the North Western, have installed C.T.C. with signals for train movements in both directions on both tracks.

On important single-track lines not previously signaled, most railroads are installing centralized traffic control rather than conventional automatic block signaling, because the C.T.C. includes signals for authorizing train movements in place of the ancient time-losing train order method. For example, in 1953 the Western Pacific completed an eight-year program of traffic control on 746 miles of single track on its route between San Francisco and Salt Lake City. Similarly, on territory not previously signaled, the Kansas City Southern is installing centralized traffic control on 95 miles of single track between Heavener, Okla., and DeQueen, Ark. Furthermore, in territory previously equipped with automatic block, many railroads are replacing this old signaling with modern C.T.C., because of the savings obtained in train time and operating expenses. Thus,

AUTOMATIC BLOCK SIGNALING INSTALLED IN 1953

Railroad and Location	Miles of Road	No. of Signals	Manu- facturer
ATASE			
Chicago—Willow Springs, III	14.3d	21	Union
Argentine, Kan,—Holliday	8.94	19	Union
Turner, Kan.—Holliday	7.0s	4	Union
Morris, Kan,—Holliday	3.1s	9	Union
Ottawa Jet., Kan,—HU	2.7s		Union
ACL	2.10	****	Onion
Moncks Corners, S. C.—Meads	22.0d	90	Union
Winter Park, Flg.—Orlando	6.3d	12	Union
BAM	0.30		Omon
Central Square, Mass	****	1	GRS
Laconia, N. H	4.51	6	GRS
CNR	4100	-	- Corre
Kamloops, B. C.—Spences Bridge	74.64	94	GRS
CPR	1 -1200		One
Chalk River, Ont.—North Bay	117.0s	169	IGRS and
West Burke, Vt.—St. Johnsbury	16.3s	20	Union
Norcran, Man.—Whittier	5.6d	4	Union
MacGregor, Man.—Austin	10.5d	3	GRS
Parkbeg, Sask,	6.5d	3	GRS
Suffield, Alta,—Brooks	43.01	54	GRS
Revelstoke, B, C.—Endiver	19.5d	11	GRS
CAW!	17.50		0110
Chicago	0.7d	1	Union
CMSiPaP	0.10		Omon
Milwaukee, Wis.—Wadsworth	43.0d	60	Union
DLAW	73.00	00	Omon
Nicholson, Pa.—Hallstead	22.5d	25	Union
Avoca, N. Y.—Wayland	15.4d	18	Union
Mt. Morris, N. Y.—Craigs	4.2d	5	Union
GN	7.20		Omon
Canisteo, Minn,-Gunn	4.70	6	GRS
Wahpeton, N. D.—Vance	63.9	83	GRS
MaC	00.70	43	0110
PT			
Portland, Me	0.7d	9	GRS

Railroad and Location	Miles of Road	No. of Signals	Manu- facturer
M-K-T Sealy, Tex.—MP 1038	36.3s	43.	Union
Syracuse, N. Y.—Belle Isle	3.6d 38.1d	37	GRS GRS
New York Transit System Jackson Ave.—180th St. 239th St. Yard	14.0s 0.8s	105	Union
NYOAW Fulton, N. Y.—Arrowhead	4.01	4	Union
Deerladge, Mont.—Garrison	10.5s 2.5d	8	GRS GRS
ONR New Liskeard, Ont.—Latchford P&LE	18.5	40	GRS
McKeesport, Pa.—Wylle	5.4d		Union
Subway	1.5s	18	Union
Glenmore, N. J.—Ewing. Clemburg, Pa.—West Millon. Cumru Jct., Pa.—Lebanon Valley Eastwick, Pa.—Essington. Trenton, N. J.—West Trenton. WM	9.9° 4.4s 3.9s 7.0s 4.0s	9 9 4 7 5	Union GRS GRS GRS GRS
Baltimore, Md	9.0d	2	Union
Elko, Nev.—Alazon	49.01	25	Union
Total	441.0s 931.6d	947	
d double track s single track * reverse signaling two tracks † signaling for one direction on a paired to	48.0†		

CENTRALIZED TRAFFIC CONTROL INSTALLED IN 1953

Railroad and Location	Miles of Road	No. of Power Switches	No. of Signals Control- led by Levers	No. of Inter- mediate Auto- matic Signals	Manu- facturer	Railroad and Location	Miles of Road	No. of Power Switches	No. of Signals Control- led by Levers	No. of Inter- mediate Auto- matic Signals	Manu- facturer
AT&SF Newkirk, Okla.—Cross	10.5	2	6	6	Union	MP Washington, Mo.—HD	7.2		8	**	GRS
White Eagle, Okla,—Nowers . Burnett, Okla,—Norman	88.2s 16.1s	27	81 19	36	Union Union	Newport, Ark		4		2	GRS
Haralson, Ga.—Bellwood	47.00	14	37	20	Union	Sanford, Ind.—Mattoon, Ill	47.91	. 23	68	44	GRS
Sanford, Fla.—Tampa Meads, S. C.—Bennett	97.0s 4.0d	56 23	135	48	Union	Knox, Ind.—Van Loon	45.0s	14	57	8	Union
Lowell, Mass	**	**	2		GRS	Waynesboro, Va.—Shenandoah Bentonville, Va.—Hagerstown,	34.3s	3	16	18	Union
No. Berwick, Me	4.4	1	1	2.4	GRS	Md	70.15	11	54	40	Union
North Dayton, OLima	56.5s 10.1d	23	50	40	GRS	Bluefield, W. Va.—Blake StL-SF	7.68	6	7	2	Union
CNR	10,10					Amory, Miss.—Jasper, Ala Clarkdale, Ark.—Critco	79.1s 5.4s	16	63	36	Union
Conmee, Ont,—Atikokan,	107.36	38	110	46	GRS	SiLSW	4.5d				
Sterrett, GaE. Norris Jct	19.46	7	21	17	Union	Dexter Jct., MoJonesboro,					
Holcomb Rock, VaLynchburg	10.4s	5	15	* *	Union	SAL Ark	84.5s	15	49	46	Union
Beaver Jct., Ky.—Allen	1.8s	4	9	***	Union	Coleman, Fla		6	6	200	Union
Wheeler, Ohio-Robbins	0.2d		15	8	Union	Thalman, GaHayner	11.0s	5	15	2	Union
Fowlerton, Ind.—Peru	38.9	10	36	17	Union	Kingsland, Ga.—Gross, Fla Savannah, Ga	6.81	2 3	6	4.5	Union
Peru, Ind.—No. Judson	48,85	10	33	26	Union	Southern	* *	3	* *	* *	Onion
So. Lyon, Mich.—Plymouth	13.3s	1	3	8	GRS	Ludlow, Ky.—Tateville Oakdale, Tenn.—Daisy	171.0s 66.5s	91 23	132	**	GRS GRS
Oreapolis, Neb.—Ashland via					000	SP	00.00		-	**	
Omoha	43.9s 1.0d	20	85	18	GRS	Klamath Falls, Ore.—Crescent Lake	97.7s	31	91	103	Union
Oreapolis, Neb.—Ashland via	25.7s	7	38	8	GRS	Tano Harrisburg, Tex.—Rosenberg	34.0s	10	47	18	Union
CRIAP						Avondale, La,—Salix	6.4s		5	12	Union
Atlantic, Iowa—Council Bluffs Clinchfield	57.5s	9	56	22	Union	THAB				-	GRS
Delano, Va.—Elkhorn City	15.06	4	10	10	Union	Welland, Ont.—Hamilton	32.5s 3.3d		35	**	GKS
Hudson, Pa.—So. Hudson	1.0s		2	**	GRS	Cheyenne, Wyo.—Dale	48.0s	28	69	40	Union
Moodna Cr., N. YCampbell						Cheyenne, Wyo. Hermosa	37.0d	20	56	108	Union
Hall	8.7s	2	5	5	GRS	Fairbury, Neb.—Glbbon Villard Jct., Wash.—Zanger	104.0s	14	53	10	Union
Howells, N. Y.—Port Jervis	1.7s 18.7d	**	**	13	GRS	WM					
KCS Heavener, Okla.—Mena, Ark.	41,0s	19	36	16	GRS	Reid, Md.—Hagerstown	5,30	3	16	5	Union
LaN Knoxville, Tenn.—Kirstall	21.0s	11	29	10	Union	Totals	1,742.7s 96.2d	680	1,845	956	

INTERLOCKINGS INSTALLED IN 1953

Railroad and Location	No. of Home Signals	No. of Switches	Manu- facturer
ATASF			11-1
McCook, III.	6	3	Union
Willow Springs, Ill	3	1	Union
Winslow, Ariz		- 5	Union
BAM		4	GRS
Mechanicville, N. Y	6	4	GKS
Montreal, Que	B	6	Union
CFR		0	Onion
Whittier, Man	17	19	Union
CAO			Omon
Cabin Creek, W. Va	28	91	Union
Newport, Ky	14	13	Union
Plaster Creek, Mich	9	7	GRS
Sunnyside, Mich	8	7	GRS
CAWI			Ons
Chicago, 47th Street	20	63	Union
Chicago, 12th Street	5	4	Union
CMSIPAP	-	-	Omon
Bensenville, Ill	5	10	Union
CIAL	-		Omon
Monon, Ind	3	1	GRS
Monticello, Ind	5		GRS
CRIAP	-	**	-
Gresham, III	64	48	Federal
Biddle, Ark	14	5	Union
DAH			Omon
Hudson, Pa	19	13	GRS
DLAW			
Newark, N. J. 4		**	Union
Frie			
Howell's Jct., N. Y Otisville, N. Y Port Jervis, N. Y	6	4	GRS
Otleville, N. Y.	4	2	Union
Port Jervis, N. Y	5	3	GRS
GN			
Willmar, Minn	7	7	GRS
Willmar Jct., Minn	8	7	GRS
Grand Forks, N. D	6	9	GRS
Interbay, Wash	3	1	GRS
Whitmarsh, Wash	2	4	GRS
GMAO			
Godfrey, Ill	5	3	GRS
LV			
South Plainfield, N. J	11	11	GRS
Ashmore, Po	8	4	GRS
Jersey City, N. J	4	**	
Chapel, N. J.	3	**	
Lan			
Nashville, Tenn.			
North Receiving	7	4	GRS
South Receiving	3	1	GRS
North Radnor	6	4	GRS

Railroad and Location	No. of Home Signals	No. of Switches	Manu- facturer
MeC	5	2	GRS
Portland, Me., all plant	4	9	GRS
Union Station	39	24	GRS
NEASH		-	
Atlanta, Ga	16	10	Union
NYC			
Frantucham Mass	21	19	GRS
Sand Bank, N. Y	4	3	GRS
Hoffmans, N. Y	12	9	GRS
Fonda, N. Y	8	12	GRS
Beffalo, N. Y	8	7	GRS
East Rex, Ind	3	1	GRS
West Rex, Ind	3	1	GRS
NYC&StL Cleveland, Ohlo	2	2	Union
Bluefield, W. Va	7	6	Union
ONR			
Englehart, Ont	4	1	GRS
El Monte, Cal	6	3	Union
Media, Pa	10	4	Union
Reading		40	CRC
Woodburne, Pa	8	19	GRS
Cumru Jet., Pa	3	1	GRS
REAP	3		GRS
Possum Point, Vg	- 5	3	Union
North Possum Point	5	5	Union
SAL	-		
Savannah, Ga		**	Union
Southern			
Valdosta, Ga	6	**	GRS
Anniston, Alg	6	* *	GRS
Los Nietos, Cal	7	9	
TAP	,		
Avondale, La	4	- 2	GRS
THAB	-	-	
Hamilton, Ont	6		GRS
UP			-
Kalan, Wash	2	9	GRS
Wabash	-	44	Union
Decafur, III	25	14	Union

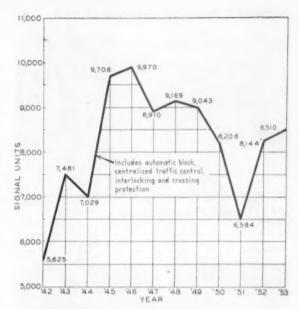
^{*} New machine replaces three former interlockings.

the Louisville & Nashville is installing C.T.C. to replace automatic block on 162 miles of single track between Corbin, Ky., and Etowah, Tenn.

The maximum capacity of a single-track main line is attained when trains operate at the maximum permissible speeds, and with very little time lost in making meets or passes. This ideal is being closely approached in new centralized traffic control completed last year, on 107 miles of single track on the Santa Fe, between Bakersfield, Cal., and Fresno. The sidings are two miles long, with new No. 20 turnouts including a novel use of a 403-ft. section of tangent, one purpose of which is to reduce the swaying of cars when going through. Trains can now enter and leave sidings at speeds up to 40 m.p.h. Furthermore, a special range of signal aspects are provided to direct enginemen to bring their trains up to and through these turnouts at the speeds for which they are designed.

With the long sidings, high-speed turnouts and special signals that are special features of this single track C.T.C. territory, it is successfully handling 8 passenger trains and 12 or more freight trains daily, with 80 per cent of the meets non-stop. Several years ago an operating officer of another railroad that has had extensive experience with C.T.C. said that single track with C.T.C. has 75 per cent of the capacity of double track. The Santa Fe experience should raise the 75 per cent estimate.

For 1954, the new thinking in the interlocking field



SIGNALING UNITS INSTALLED each year.

is that the control of two or more comparatively large interlockings, even in heavy traffic territory, can now be consolidated.

This objective is now more practicable than ever

HIGHWAY-RAILROAD GRADE CROSSING PROTECTION INSTALLED IN 1953

	Number of Crossings Protected by New Installations No. of Crossings		Source of Funds Based on Number of Crossings				Number of Protec New Inst	Source of Funds Based on Number of Crossings			
	at which						No. of Crossings at which				
Railroad	Electrically- Operated Gates and Flashing- Light Signals were Installed	No. of Crossings at which Flashing-Light Signals only were Installed	Rail-	Public Funds (Any Source)	Joint Railroad and Public Funds	Railroad	Electrically- Operated Gates and Flashing- Light Signals were Installed	No. of Crossings at which Flashing-Light Signals only were Installed	Rail- road	Public Funds (Any Source)	Joint Railroad and Public Funds
A&WP	2		2			LI	4	4		**	
Georgia	1			**	1	MeC	7		3	**	4
ATASF	72	12	42	9	33	PT	1	4.5	1		4
ACL	40	- 7	3	3	41	MSIPASSM	11	7	6		12
B&O	36	13	33	5	14	MaStL	9	1.1	2	. 3	4
B&A	2	80			9	MP	34	11	33	3	9
B&M	26	7	95	3	5	GCL	24	41	21	**	3
BALE	3	**	3			IGN	14	1	15	* *	**
CPR	38	6		2	42	M-K-T	12	1.5	1.8	**	4
CNR	49	8			**	NC&StL	2		**		2
GTW	7	1	1	1	6	NYC	37	27	38	7	19
CV	2	**	2		**	NYCASIL	26	11	30		7
C&WC	1		1			NYNHAH	42	2	44	**	
CofG	11	* *	1	* *	10	NYOAW		5	5		
C&O	9	9	12		6	NaW	15	1	13	* *	3
PM	17	4	8	8	5	NP	30	4	20	3	11
CBAQ	28	10	17	4	17	ONR	2	11	**	* *	2
C&EI	7	3	2	**	8	PE	14	11	9	1	4
CIAL	5	**	4		1	PRR	41	28	31	5	33
C&IM	1	1	2			P&PU	5		4		1
C&NW	30	25	25	**	30	P&WV	2	1	3		**
CGW	6	1	2		5	Pale	**	1	1	**	
CMS(PAP	25	1				Reading	6	10	12	**	4
CRIAP	14	10	10		14	RFAP	**	2	* *	2	
CSS&SB	1	**	1			S4L-SF	26	7	27	**	6
C&S	1				1	StLSW	2		**	* *	2
D&H	3	4	7		**	SAL	20	2	2	4	16
DL&W	2	7	9	**		Southern	37	5	23	5	14
DaRGW	6	**	2	4	**	SP	50	- 28	21	10	47
DSS&A	7	1	6	1	1	TANO	18		10	1	7
EJ&E	3	1	1	**	3	SP&S	2		2		* *
Erie	8	24	27	1	4	Spokane Inter.	2			* *	
FEC	3	19	3	**	19	TRAofStL		4	3	**	1
FIWAD	2	* * * * * * * * * * * * * * * * * * * *	1	1		TaP	12	3	6	3	6
GN	8	10	8	2	8	TH&B	2			2	1
G8&W	1	**	**	**	1	Tenn. Cent	7		6		1
GM&O	10	2	2	2	8	TP&W	6		1	**	5
IC	16	4	4	1	15	UP	34	7	16	1	24
ICL	2	5	6	**	1	Virginian	1	2	1		2
KCS	9		3	3	3	Wabush	11	5	12		4
LS&I	3		3			WM	6		3		. 3
LAHR	9		2			WP	3		1	**	9
LV	9	5	11	**	3			-	_		-
LAN	7	1	3	2	3	Totals	1,112	379	735	102	577

AUTOMATIC TRAIN STOP INSTALLED IN 1953

Railroad and Location	Miles of Road	No. of Locomotives Equipped	Manu- facturer
ATASF			
Merrick, Kan.—Ellinor	10.11		Union
Newkirk, Okla.—Cross	10.15		Union
Cross, Okla.—White Eagle	6.6d		Union
White Eagle, Okla.—Nowers	88.21		Union
Nowers, Okla.—Burnett	4.6d		Union
San Bernardine, Cal.—Sante Anita	16.11		Union
NYC	42.50		Omon
Syracuse Jct., N. Y.—Belle Isle	3.6s		GRS
Belle Isle, N. YLyons	38.11	Ť	GRS
Philadelphia Transit System			
Philadelphia Subway	1.5d		Union
	208.76		
	12.7d		
* Track No. 4 reverse A. T. S.			
t Track No. 3 sources A. T. C.			

CAR RETARDER PROJECTS PLACED IN SERVICE DURING 1953

Railroad and	No. of Re- tarders	Rail Feet of Re- tarders	No. of Switches	No. of Sig- nals	No. of Control Ma- chines	Manu- facturer	Classi- Acation Tracks
CMSIPAP Bensenville, III.	16	2,222	79	9	2	Union	70
Grand Jet., Colo	. 4	792	31	4	2	GRS	24
Blue Island, III. US Steel Corp.	7	1,540	43	4	2	GRS	41
Morrisville, Pa.	3	164	3	4	1	GRS	4
Totals	30	4,718	156	21	7		

before, not only because of improvements in interlocking control machines but also because of the developments of electronic devices, syncrostep, and multiplex high speed code line systems, that have the capacity for handling numerous outgoing controls and incoming indications simultaneously, and all over two line wires. Thus the size of an interlocking, or its remoteness from the control point, are not limitations with respect to consolidation of control. For example, at Newark, N. J., the Lackawanna used multiplex high-speed code to combine the control of three sizable interlockings, and a fourth may be brought in soon.

A further consideration of importance is that improved and new types of interlocking control machines are being introduced which can be easily and quickly manipulated. In addition to the entrance-exit and route control systems which have been used for several years, further new ideas in interlocking control came to attention in 1953. The new machine installed by the Lackawanna at Newark, N. J., has features to expedite manipulation, as applied in this project. At 47th Street in Chicago, the Chicago & Western Indiana installed an interlocking control machine on which the switches are controlled by push-turn levers in a row at the bottom of the panel, and the signals are controlled by push buttons on the track diagram. At Gresham Junction, in Chicago, the Rock Island installed a new type machine in which each signal is represented by a rotary knob on the track diagram, a route being set up by turning a knob so that the pointer is over the number representing the exit, then the final action is to push the knob.

Perhaps the ultimate in easily manipulated concentrated control machines is a sloping desk panel, the size of an ordinary office desk top, each interlocking being controlled by entrance-exit buttons which are in a pair of vertical rows. These pairs of rows can be

CAB SIGNALING INSTALLED IN 1953

Railroad and Location	Miles of Road	No. of Loco- motives Equipped	No. of Cab Signal Aspects	Manu- facturer
CBAQ Lo Vergne, III.—Eola	24.01	132	4	Union
Jamaica, N. Y.—Mineola	3.7d 5.5f	32	3	Union
Jamaica, N. Y.—Valley Stream Floral Park, N. Y.—Hempstead	6.4d 2.1s			Union Union
PRR Xenia, Ohio—Columbus	55,0d		4	Union
Green River, Wyo.—Carter	58.4d	25	3	Union
Totals	24.0t 127.2d 5.5f 2.1s	189	14	

spaced four to six inches horizontally. Thus, a panel no longer than an ordinary desk, and easily manipulated by one man, can include the controls for perhaps seven or more interlockings on an entire terminal division of perhaps 25 to 35 miles of multiple track heavy traffic territory. The major objective of improving train operations by utilizing tracks more effectively is accomplished because the one man has control of switches and signals to set up routes and authorize train movements by signal indication in the entire terminal area, or a major portion thereof.

Thus interlockings are now going through extensive changes becoming, in effect, completely new plants. For example, in the C&WI 47th Street Chicago project, all the switch machines, signals, relays, wiring, and batteries, as well as control machines, are new; nothing of the old plant remains but two signal bridges.

In the field of signaling equipment in freight classification yards, the new feature for 1953 was the adaptation of electronics for the automatic control of car retarders, the first installation being made in a yard on the Elgin, Joliet & Eastern at Gary, Ind. At Bensenville, Ill., near Chicago, the Milwaukee rebuilt a classification yard, changing from a flat yard to a gravity yard with power switches and retarders, including push-button control to set up the control of switches, and automatic retarder control. This yard, which has 70 classification tracks with a total capacity of 5,311 cars, is said to be the largest yard to be equipped with retarders, Other large yards being equipped with retarders are under way or nearly completed at Houston, Tex., on the Southern Pacific (T&NO); at Conway, near Pittsburgh, Pa., on the Pennsylvania; at Chattanooga, Tenn., on the Southern; and at Nashville, Tenn., owned jointly by the Nashville, Chattanooga & St. Louis and the Louisville & Nashville.

In the past few years, the number of motor vehicles operated on highways has increased rapidly, whereas the number of trains is less on many railroads. Nevertheless the railroads have continued active programs to install modern forms of protection at highway grade crossings as is shown by the fact that protection was installed at 1,491 crossings in 1953, which is an increase of 579 over the average for the previous 11 years. Flashing-light signals were installed at 1,112 crossings in 1953. At crossings with heavily traveled highways, electrically operated gates also are being installed. In 1953, gates were installed at 379 crossings.



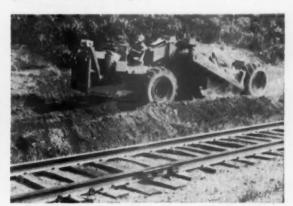
RAIL LAYING activities, up somewhat in 1953, promise to go still higher in 1954. This gang on the New Haven is laying rail with a crawler crane mounted on a special car with flanged wheels.



TRACK SURFACING operations were carried out on a normal basis in 1953. Here a gang on the Union Pacific is tamping track with electric vibratory tools powered by generators carried on a push car.



RIGHT-OF-WAY GRADING, using off-track equipment, is a common sight on many roads. The machines used include motor graders like this for shaping slopes and . . .



. . . POWERED SCRAPERS which introduced the principle of mass-production in earthmoving. The machines in these two views are operated by the Santa Fe.

M/W Activity on Stable Basis

Outlay for upkeep of fixed properties went up slightly last year to new high

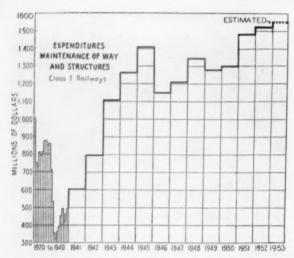
— Rail renewals in moderate gain after strike-induced slump of 1952

By MERWIN H. DICK

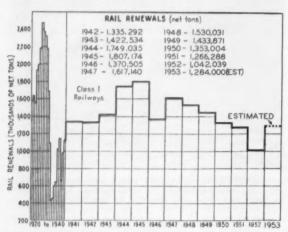
From a statistical point of view the operations of rail-road maintenance of way and structures departments produced very little of a striking nature in 1953. For the most part the major indices of activity of these forces showed no great deviation from those of recent years. The only instance in which there was a marked change in direction—a moderate increase in rail renewals—could be easily explained and had no deep significance in the sense of representing an underlying trend.

The total expenditures for the maintenance of railway tracks and structures in 1953 are indicative of the relative stability of this phase of railway activities in that year. With actual figures for the first nine months as a basis, it is estimated that the Class I railroads of the country spent \$1,560,000,000 on maintenance of tracks and structures in 1953. This is an increase of only about \$40 million (less than 3 per cent) compared with 1952. Of some significance, however, is the fact that for the third consecutive year these expenditures attained a new all-time high, even though the increases each year have been relatively small.

A month-by-month comparison of maintenance-of-way expenditures in 1953 with those in the previous year shows that for the first five months these expenditures were about on a par in the two years. During June, July



MAINTENANCE EXPENDITURES edged up to a new high for the third consecutive year.



RAIL RENEWALS in 1953 make a good showing only when compared with 1952 when they were depressed as a result of the strike of steel workers.

and August, however, expenditures in 1953 were substantially higher than in the previous year. During the closing months of both years the dollar outlay for M/W work was again running about neck-and-neck, although toward the end of 1953 there was a tendency for activity to ease off a bit.

The increases in monthly expenditures during the summer months of 1953, rather than being indicative of a sudden spurt in activity, were a reflection of the sharp slump in rail renewals in 1952 caused by the strike of workers in the steel plants. In view of the stability of other classes of maintenance work, the increase in dollar expenditures in 1953 over 1952 may be attributed in large part to the heavier rail renewals.

No particular change occurred in the M/W ratio (maintenance expenses expressed as a percentage of operating revenues) during 1953. For the first nine months of the year this ratio was 14.7 per cent as compared with 14.6 per cent for the corresponding period of 1952. Thus, the M/W ratio is being held at about the same level that has prevailed since the end of World War

II—a level, incidentally, which is currently somewhat higher than during and prior to the conflict. What this means is that at least a temporary stalemate has been reached in the efforts of maintenance officers to counteract rising labor and material costs.

Rail Renewals in Moderate Gain

One of the charts shows the trend of rail renewals on Class I roads since 1920, with actual figures showing the net tons of new rail laid in replacement from 1942 to 1953, inclusive. The figure for the latter year (1,284,000 net tons) is an estimate based on figures supplied to Railway Age by most of the Class I railroads. It represents an increase of 241,961 tons, or 23 per cent, compared with 1952.

Because the steel strike reduced rail renewals to such a low level in 1952, the surprising thing about the renewals last year is that they did not go higher. Rail-renewal programs, as projected for 1953, contemplated the laying of a much greater tonnage of rail than actually got into the track. To a large extent the failure of the rail-roads to attain their objectives in this respect was due to inability to get deliveries. The fact remains that rail renewals are still lagging considerably behind requirements and that the time must come when deferred maintenance in rail will have to be made up.

Perhaps a start will be made in this direction in 1954. This conclusion seems justified on the basis of figures obtained from most of the Class I railroads regarding their projected rail programs. Based on these figures it is estimated that these roads as a whole hope to lay about 1,383,000 net tons of new rail during the year. The trend of national defense expenditures being what it is, it may be assumed that the railroads will have little difficulty in obtaining their new rail requirements in 1954—that is, unless there is a change for the worse in the international situation. The probability is that the trend of railroad business this year will be the most important factor in determining whether rail renewals will be higher or lower than the projected figure of 1,383,000 tons.

Tie Insertions Down Slightly

Unlike rail-laying activities, crosstie renewals maintained the established pace in 1953. A chart shows the trend of tie renewals since 1920, with actual figures for the number of ties inserted each year from 1942 to 1953, inclusive. As with rail renewals, the figure for 1953 is an estimate based on data submitted by most Class I railroads.

For 1953 it is estimated that these roads inserted a total of 29,700,000 ties in renewals, a decrease of 829,605 ties, or 2.7 per cent, compared with 1952.

Tie renewals show no indication of pulling out of the slump in which they have wallowed since the late forties. It is not to be expected that they will return to the levels of the war or prewar years, but on the other hand the service life now being obtained from crossties does not seem sufficient to justify maintenance of tie renewals at the present low rates. Nevertheless, it appears that tie renewals are headed for even lower levels in 1954. Most of the Class I railroads have provided Railway Age with

estimates of the ties they plan to insert in track in 1954. With these figures as a basis it is estimated that the Class I railroads as a whole plan to insert about 29,600,-

000 crossties this year.

If tie renewals do not rise above this projected figure they will be the lowest on record except for 1951. However, the fluctuation from the level of recent years is relatively minor. The point is that tie renewal fluctuations seem to be held to a narrow range which is somewhat below actual requirements. This point of view is shared by the Engineering Section of the Interstate Commerce Commission's Bureau of Valuation. In its 1952 "Railroad Maintenance Report" this body stated that deferred maintenance in the tie account had reached a total of \$242 million. It is significant that the major portion of this deficiency was found to have occurred between 1949 and 1952 and that it represents about $2\frac{1}{2}$ years normal installation of crossties.

Trends in the M/W Field

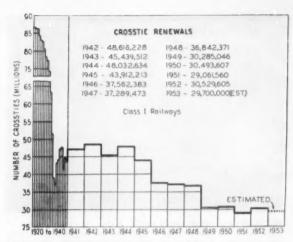
During 1953 railway maintenance officers, assisted by manufacturers and research agencies, continued their efforts to increase the effectiveness of maintenance labor and to find ways of making materials last longer. These activities have many forms and widely varying degrees, ranging all the way from the efforts of a section foreman to organize his daily work more efficiently to systemwide programs to get more production per man-hour. While the trend is by no means universal a number of large systems were known in 1953 to be putting the socalled "district gang" organization into effect. In substance, this type of organization calls for replacing conventional section gangs with larger crews operating over a greater territory. Not only does it make possible the more efficient use of mechanized equipment but it permits maximum use to be made of money spent for supervision.

Another trend that seems to be gaining is that towards the practice of putting heavy track work—including that involving out-of-face tie renewals—on a cyclical basis, so that a particular stretch of track will require only minor attention between the periods when the heavy out-of-face work is done. One advantage claimed for this practice is that it makes possible the use of mass-production methods and machines. It is proving particularly effective as a means of reducing unit costs where the gang is allowed to operate undisturbed on "dead" track, such as when the so-called "detour" system is used.

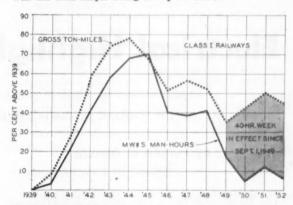
Continuous-Welded Rail

Increasing interest is being shown in continuous-welded rail or its equivalent. One large railroad was reported to be planning the welding and installation of about 50 track-miles of continuous rail in 1954. At the new freight classification yard under construction near Pittsburgh the Pennsylvania is making the largest single installation of continuous welded rail ever placed in service at one location. In this project, in which secondhand rail is being used, a total of 112 miles of continuous welded track will be constructed.

Research activity in the track and structures field is continuing at a high level, with individual railroads and



TIE RENEWALS are fluctuating within a narrow range. Will the next major swing be up or down?



MARKED DIVERGENCE in recent years between the gross ton-miles of traffic carried and the number of man hours devoted to M/W work, both expressed as a percentage of the 1939 figures, is indicated by this chart.

supply companies contributing their share in the effort along with the work being done by the Engineering Division of the Association of American Railroads. For 1953 the research budget of the Engineering Division amounted to \$364,100,000. For 1954 a budget calling for the expenditure of \$390,307,000 has been approved. This budget includes appropriations for carrying on a total of 35 different research projects, all sponsored by committees of the American Railway Engineering Association.

Along with their other endeavors M/W officers are continuing to think more and more in terms of mechanization. This phase of their activities is discussed in another article in this issue. All the efforts towards progress in this field, it must be reiterated, are aimed at getting more production per man-hour. One means of getting an idea of the progress being made in this direction is to relate the total number of man-hours paid for in the maintenance of way and structures department to the gross ton-miles of traffic carried. An accompanying chart depicts this relationship for the Class I railroads as a whole for the years 1939 to 1952, inclusive. This chart is subject to various interpretations, but it is significant that M/W man-hours in 1952 showed an increase of only 7.5 per cent as compared with 1939 whereas gross tonmiles went up 46 per cent.



HIGH-SPEED PHOTOGRAPHY helps in the study of flashovers. At the left, is a flashover of a main generator showing the gear-driven auxiliary machines silhouetted



against the arc. At the right, is a picture taken across the brushes of a traction motor showing incandescent material thrown from the commutator at the end of a flashover.*

Electrical Highlights of 1953

Applications of electric power are so changing railroad practice that they are the concern of management as well as of the engineer and maintainer

By ALFRED G. OEHLER

Electrical Editor

The diesel-electric locomotive continues to hold the center of the stage insofar as electrical devices for railroad service are concerned. Unit horsepowers have been increased, wheel slip and slide prevention devices are finding favor, and dynamic braking has become widely popular, in some cases being applied to locomotives not so equipped originally. A considerable number of other improvements have been made which should do much to insure reliability and reduce maintenance.

New and improved diesel electrical shop facilities are constantly being provided. In general, shop practices are approaching a common pattern, but innovations appear constantly and maintenance work has been extended to include testing and repair of all types of auxiliary and control equipment. The newest of the shops performs basic overhaul work on diesel motors and generators for half the railroad, and also takes care of nearly all other electrical maintenance for the railroad. It does no rewinding.

Prices for rewinding done by the locomotive manufacturers and other outside shops have been reduced to a point at which the average railroad finds it difficult to justify this operation in its own shop.

Less than a year ago, the Electrical Section Committee of the Association of American Railroads concerned with shop practice suggested that a railroad which had more than 200 locomotive units would be warranted in doing its own rewinding. With the reduced prices offered

by outside shops, this figure is now probably somewhat higher. On the other hand, one railroad with only 124 locomotive units finds it profitable to rewind. This is made possible because all locomotives on the railroad go through the point where the shop is situated, eliminating the need for shipping motors, and because the shop has an extraordinarily capable and well-knit maintenance force.

Special emphasis is being given on nearly all roads to the importance of developing trained foremen who can support the work done in the diesel maintenance shop.

The need for rewiring diesel locomotives grows with their age. Units from 8 to 12 years old must be rewired to avoid failures and excessive maintenance. In general, varnished cambric insulated wire and cable are being replaced by conductors having high-temperature rubber insulation with neoprene coating. Effective means are being developed to protect locomotive wiring from oil and dirt. Duct in place of conduit is finding increasing acceptance.

With the coming of greater horsepowers, higher speeds and more intensive utilization of diesel-electric motive power, motor and generator flashovers have become an increasing problem. On the other hand, the operators of one electrified railroad recently raised the voltage from 3,000 to 3,400 (this on a grounded system), without introducing excessive flashovers. This would make it appear that diesel flashover problem is not insuperable. Perhaps the most important factor in its solution is recognition of the divided responsibility involved.

The cause may be a matter of operation, or maintenance, or design, and since the cause is usually difficult to determine, the solution requires cooperation. For one department to point the finger at another is no out. Those

The flashovers shown in the pictures were caused deliberately in the General Electric Motor Development Laboratory at Erie, Pa., for the purpose of studying their cause and effect.

specifically interested in the subject are privileged to attend a symposium on diesel-electric motors and generators, which will be presented at a meeting of the Land Transportation Committee, American Institute of Flectrical Engineers, to be held in the Hotel Statler, New York, on the afternoon of January 20, 1954.

Main-Line Electrification

Interest in new heavy main-line electrification is probably now at an all-time low. Two installations have been abandoned because diesels have been able to operate satisfactorily through electrified tunnels and another was scrapped after providing new tunnels and better grades which allowed for steam operation.

On the other hand, it would be obvious folly to abandon the larger existing electric traction systems. One of these, referred to in a preceding paragraph, was given a new lease on life by raising the line voltage, replacing spring gears with solid gears, rebuilding some locomotives and adding new ones which had been or-

dered by the Russian government.

The most recent developments in electrification are motive power units of the rectifier type. They include multiple-unit cars and locomotives which take a.c. power from the contact system and apply it as d.c. power to motors which are the same type as those used on diesel locomotives and produced in quantity. This should aid materially in further reducing the already low maintenance costs of straight electric locomotives and cars. At the year end there were 100 such cars and 10 such locomotives on order.

Since the rectifier is unaffected by frequency, it will work on 60 cycles as well as 25, and this fact makes practical the use of 60-cycle current directly on the contact system. This could materially reduce contact and distribution system costs, one of the principal deterrents to new electrification. A 50-cycle system of this kind is in service in the Belgian Congo and two installations

are being tried out in France.

Electric power is being produced by nuclear fission. This cannot now be produced at a cost comparable with that produced from coal and oil, but it is estimated that there is enough uranium and thorium in the world to produce 23 times as much power as could be generated from all the known sources of coal, oil and gas. Theoretically, it is possible to produce electric power from nuclear fission at a small fraction of the cost of making it in coal-burning plants. The estimated cost of atomic energy plants which could be built now would not permit them to compete with coal economically, but this cost will probably be greatly reduced.

The most recent information made available on the gas-turbine electric locomotives shows that they are turning in good performance records. The number in service is being increased, the few remaining "bugs" common to all new types of equipment are being disposed of and improvements are being made. The burning of propane

is being tried out on one unit.

The high-pressure, steam turbine-electric locomotive is expected soon to make its appearance. Earlier types were abandoned because of low efficiency, but it is expected that this shortcoming will be disposed of by a high-pressure water-tube boiler.

Battery-operated trucks in freight transfer service, baggage and express handling, shop operation, etc., are finding increasing popularity. Inherent characteristics, such as quiet operation, high availability and low maintenance, are being abetted by the development of automatic battery charging control and doing away with heavy manual lifting and carrying.

The question of power supply for caboose train communication equipment has practically disappeared with the development of axle-generator drives. There are now well over a thousand, double-reduction, multiple V-belt drives rendering satisfactory service. Flat-belt drives too are doing their part. In addition, a gear and shaft drive has been developed which has turned in a good performance record with friction type journals. It will be in commercial production in a short time.

One railroad is getting 200,000 miles per belt on single reduction, endless V-belt drives for railway passenger cars. A story on this development appears in the January 1954 issue of Railway Locomotives and Cars.

Alternating current generators with rectifiers are satisfactory for caboose power supply, but rectifiers of sufficient capacity become expensive and too large for passenger cars. There are, however, germanium and silicon rectifiers which are only a fraction of the size of those now employed which could find their way into passenger car service.

For the big electrical loads such as on diners and dome cars, the undercar diesel power plants seem to offer the most satisfactory means of supplying electric

power.

Heating and Air Conditioning

Simplified air conditioning and heating controls for railway passenger cars developed by the manufacturers have operated satisfactorily, and have found favor with the railroads. Some cars equipped with undercar power plants are employing waste product heating.

Considerable attention is being given to the protection of buried structures from electrolytic corrosion. This is highly important, if expensive deterioration of newly installed fuel tanks and piping systems is to be avoided. Protective measures proposed include cathodic protection; insulating coatings; drainage of moisture; use of backfill material such as clean sand; use of non-metallic material wherever practicable; and increasing the external electrical resistance between the metallic structures and any other buried metallic material of different

galvanic potential, when this is possible.

Adequate lighting of railroad shops is at last receiving the attention it deserves. This has been brought about by the need for cleanliness and precision work essential for adequate diesel locomotive maintenance. Coupled with this is a new appreciation of what good lighting does for moral and shop efficiency. It was only a few years ago that a lighting level of 10 footcandles was considered adequate for drafting rooms, whereas now 30 to 40 footcandles are achieved in a number of shops, and one shop boasts a sustained 60 footcandles on the working plane. This has been made possible at relatively modern installation, operating and maintenance costs by the development of new lighting sources and lighting units. Ventilated fixtures are doing much toward reducing maintenance costs.



CHIEF DISPATCHER can talk by radio to train crews, operators and the trainmaster, which has helped the Great Northern move a record tonnage of iron ore.



YARDMASTER can communicate with switching crews and other personnel via the talk-back loudspeaker system in a Wabash yard at Decatur, Ill.

Communications Outlook Bright

Installations in 1953 topped previous five year average—Road train communications and yard radio reached new highs — Forecast for 1954: Continued high volume of installations

By R. W. McKNIGHT

Associate Editor

A bout 72 per cent more units of railroad communications equipment were installed in 1953 than was the annual average for the previous five years. Outstanding in 1953 was the total of 2,025 transmitting-receiving radio equipment units installed on locomotives, cabooses and wayside stations in road train communications systems, this total being 37 per cent over that for 1952 and 144 per cent over the average for the previous five years.

Radio in yards increased from 529 units installed in 1952 to 715 units installed in 1953. Construction of loud-speaker systems in yards decreased from 2,677 new units in 1952 to 1,366 in 1953, but several large yard projects are now under way to bring this total up again in 1954. The installation of intercommunication systems in freighthouses and shops increased from 1,117 units in 1952 to 1,200 in 1953.

A total of 198,056 miles of new circuits was installed in 1953, which was 33 per cent greater than the average for the previous five years. A total of 23,902 miles of new copper line wire was installed in 1953 which was an increase of 24 per cent over 1952, and 53 per cent over the five-year average. Increases were also registered in 1953 for the miles of new or rebuilt pole lines, and the miles of road dispatched by telephone.

Considered as a whole, the construction of railroad communications facilities averaged 2,411 units annually in the four years 1948 through 1951, and then jumped to 5,798 units in 1952. This high level was continued in 1953 with 5,306 units, and prospects are favorable for continued activity because these new communications systems are necessary to expedite railroad operations and at the same time they reduce operating expenses, thereby paying for themselves in three or four years.

Radio has brought voice communication to train operation, and thereby has facilitated train movements in numerous ways, as has been detailed in many articles in Railway Age concerning projects of such railroads as the Pennsylvania, the Erie, Northern Pacific, Bangor & Aroostook, the Milwaukee, the Rock Island, Southern Pacific, Missouri Pacific and Richmond, Fredericksburg & Potomac.

These roads and numerous others have recognized the benefits of road train communications for four or five years, but on some roads installations of radio have been postponed until the changeover from steam to diesel is completed, and until some problems in caboose power supply have been solved. With these factors behind them, the railroads installed 1,475 radio units in train communications in 1952 and this jumped to 2,025 units in 1953.

More roads are becoming interested in radio, as is indicated by the fact that the number of roads that installed road train radio jumped from 22 in 1952 to 33 in 1953. This should continue at a high level for several years, because only a few railroads, such as the Erie and the Pennsylvania, have equipped all their major lines, and numerous roads are only well started, or, up to now, have done nothing.

Improved service to shippers, as well as reduced operating expenses, are important benefits of radio communications in yards and industrial terminal areas. Previously yardmasters and terminal trainmasters used "shoe leather," bicycles and automobiles to keep in touch with crews. Now, from a yard office, or an automobile equipped with radio, the yardmaster or trainmaster can communicate with crews, and thereby frequently secure information to prevent the occurrence of delays and congestion. Numerous railroads recognize these benefits of yard and terminal radio and made in-

ROAD TRAIN COMMUNICATIONS INSTALLED IN 1953

Railroad and	Miles of Road	No. of Locos. Equip-	No. of Cabs. or Other Cars	No. o Fixed Ways Stas.	Manu- facturer of	No. of Walkie- talkie Sets	Railroad and Location	Miles of Road	No. of Locos. Equip- ped	No. of Cabs. or Other Cats	No. a Fixed Ways Stas.	Manu-	No. of Walkie- talkie Sets
Alton & Southern System	34	1			Federal	**	SILBAM			Cues	urus.		0013
ATASF Clovis, N. M.—							NYC System	1,723	5	* *	4.6	Motorola	* *
Clavis N. M	184		6		Bendix		Belle Isle, N. Y.— Benson Mine, N. Y	144	2	2		Motorola	
Belen, N. M	241		41	2	Bendix	+ *		1.44		-		G. P. R. S.	**
Belen, N. M Belen, N. M.— El Paso, Tex	224				Bendix	5	NYC&SIL Buffalo, N. Y.—						
Wayeross, Ga							Bellevue, Ohio Buffalo, N. Y.—	247	16	35	8	Bendix	35
Montgomery, Ala	314	10	5		Bendix	7	Rellevue Ohio	247	4	4	**	Westinghouse	4
SystemBaLE	600	10	9		Federal	9	NP St. Paul, Minn.—	0.47					
Connegut, Ohio-							Dilworth, Minn Mandan, N. D.—	247	2.2		2.5	Motorola	4
N. Bessemer, Pa	143	38	21	4	Bendix	11	Glendive, Mont Mandan, N. D.—	206	* *		8	Bendix	**
Savannah, Ga.—	190	-	-				Dickinson, Mont	101			4.0	Motorola	1
Savannah, Ga.— Macon, Ga.— Macon, Ga.—		3	3	1	Motorola	3	Laurel, Mont.— Livingston, Mont	101			**	Motorola	2
Atlanta, Ga	103						Laurel, Mont,— Missoula, Mont	340			3	Bendix	
Albany, Ga Macon, Ga.—	106	6	6	**	Motorola	6	Seattle, Wash.—				3		**
Columbus, Ga Columbus, Ga	100						ONR Sumas, Wash	128			* *	Motorola	4.
Columbus, Ga.— Birmingham, Ala	484)						North Bay, Ont						
Columbus, Ga,—	154	6	6	**	Motorola	6	PRR Englehart, Ont	138	10	10	* *	Motorola	10
C&O	145)						Stanley, N. Y.—	35			4.0	Union	
Columbus, Ohio- Tolede, Ohio	420						Watkins Glen, N. Y. Watkins Glen, N. Y.— Horseheads, N. Y.— Horseheads, N. Y.—						* *
CRWC	130	65	31	5	Westinghouse	**	Horseheads, N. Y Horseheads, N. Y. —	16			10	Union	**
System*	8,800		4.4		Motorola	11	Sned, Pa	20			10	Union	* *
System	1,500	-	2	1.4	R. R. Tel.	**	Cresson, Pa.— Westover, Pa	28			1.0	Union	
System	7,600	25	28	10	Motorola	28	Reading Neshaminy Falls, Pa.—						
DaRGW Denver, Colo.—							Fairless, Pa Hellertown, Pa.—	12	10	11	1	Westinghouse	3
Salt Lake City, Utah	570	9	9		Bendix		Bethlehem, Pa	4	5	11	1	Westinghouse	3
Erie		**	4.4	* *	Motorola	27	StL-SF System	4,700	16	5		Bendix	5
Jersey City, N. J.— Chicago, Ill	998	73	22		Federal								
GN	,,,		-2		Motorola	25	Jacksonville, Fla.— Hialeah, Fla. Coleman, Fla.—	395)					
Allouez, Wis							Yoeman Yard, Fla	75					
Virginia, Minn	188	14	16	5	Bendix	**	Baldwin, Fla.— Montgomery, Ala	390	20	12		Motorola	50
Green Bay, Wis.— Kewaunee, Wis	36			3	Motorola		Columbus, Ga.—						
	30			3	G. E.	- * *	Richland, Ga	38)					
GM&O E. St. Louis, III.— Mobile, Ala							SystemAGS	7,565	193	39	1.4	Motorola	178
Mobile, Ala	1,530	49	33		Materia	2	Chattanooga, Tenn.—			_			
New Orleans, La	1,330	44	33	,	Motorola	2	Meridian, Miss	295	15	7	1	Motorola	36
III. Term. E. St. Louis, III.—							Cincinnati, Ohio— Chattanooga, Tenn.	335	34	15	6	Motorola	17
JCL E. Peoria, III	168	6	6	1	Motorola	8	GS&F	333	24			Mololola	
, Jersey City, N. J.— Scranton, Pa							Valdosta, Ga.— Palatka, Fla	134	8	3	2	Motorola	6
KCS	191	14	16	* *	Motorola	34	Macon, Ga.— Jacksonville, Fla	261	16	7		Motorola	11
Kansas City, Mo -	789	1 *		1*	blomer		NOANE	201	10				
Port Arthur, Tex	109	1.		1.	Harmon	**	Meridian, Miss.— New Orleans, La	202	8	7	4	Motorola	17
Hope, Ark,— Pineville Jct., La.	194)						Eugene, Ore.—						
Pineville Jct., La. Shreveport, La.— New Orleans, La.	1						Roseville, Cal	500	55	51	10	Motorola	6
Shreveport, La.—	505		5*		Harmon	**	Truckee, Cal.— Sacramento, Cel	120			4	Motorola	,
Farmersville, Tex	184)						5P#5						
Bangor, Me.—	422						Camas, Wash Stevenson, Wash Bingen-White Salmon,					Bendix Bendix	**
Rigby, Me.—	133	4	4.4	44	Motorola	4	Bingen-White Salmon,				1	Bendix	
MP St. Johnsbury, VI	131	4	4.4	1	Motorola	4	Wash Lyle, Wash				1 1	Bendix	4.4
System	6,960	36	20	1	Materola		TAP				1 1	Bendix	4.4
Gypsum, Kan.— Kansas City, Ma	199			7 1	Motorola		Texarkana, Ark.— El Paso, Tex	860		3	14	Bendix	3
Eton, Mo.— Myrick, Mo	29							900		8	1-4	A LEAST	
Jefferson City, Mo					Motorola		Effner, Ind.— Keokuk, Iowa	239	12	11	Y 1	Westinghouse	
St. Louis, Mo Little Rock, Ark	125	**	11		Motorola Motorola	**			**	++	F 1	Hallicratter,	11
Lake Charles, La				1 1	Motorola		Totals		808	500	151		566
System	1,104	5		1	Motorola	* *	 Inductive train communicat Automobile. 	ions.					

stallations in 1953 totaling 715 units as compared with 529 units for 1952, and compared with an average of 245 units installed annually in the years 1948 through 1951.

These 1953 projects are in small as well as large yards. One road says radio or even one switch engine, serving an extensive scattered industrial area, will pay for itself quickly.

Walkie-talkies have been used extensively in car checking and car inspecting operations in yards. Although figures have been available for only two years, 88 more walkie-talkie radio sets were purchased for yard use in 1953 than the year before, which represents an 85 per cent increase. In 1953, the Frisco, Southern Pacific and Union Pacific installed walkie-talkies for car checking, making it possible for a yard clerk, using a walkie-talkie,

YARD RADIO COMMUNICATIONS INSTALLED IN 1953

Railroad and Location	No. of Loca- motives Equipped	No. of Fixed Stations	Manu- facturer	No. of Walkie- talkie Sets	Railroad and Location	No .of Loco- motives Equipped	No. of Fixed Stations	Manu- facturer	No. of Walkie- talkie Sets
ATASE	1				MeC				
Albuquerque, N. M	4	1	Bendix		PT Portland, Ma	16	3	Motorola	2
Amarillo, Tex	5	4	Bendix	34	M-K-T				
Argentine, Kan	4		Bendix		Denison, Tex	6	1	Bendix	**
Corlsbad, N. M			Bendix	4	MP				
Pallas, Tex	2		Bendix Bendix		St. Louis, Mo	10	1	Motorola	**
Gallun N M	1		Bendix		New Haven, Conn	12		G. R. S.	
Los Angeles, Col	5		Bandix		NP	12		O. N. J.	**
Gallup, N. M Los Angeles, Cal Los Angeles, Cal	40		Bendix		Duluth, Minn	2		Bendix	**
Needles, Cal	1		Bendix		Ironton, Minn	2	1	Bendix	1*
Richmond, Cal	2		Bendix	* *	ONR		-		
San Bernardino, Cal	8		Bendix Bendix	**	North Bay, Ont	2	1	Motorola	2
Seligman, Ariz Topeka, Kan	5	4	Bendix	**	Morrisville, Pa	4	3	Motorola	
Winslow, Ariz			Bendix		Prioristine, Fu		1	G. E.	**
ACL					Columbus, Ohio	4.4	1	Motorola	2
Charleston, S. C	5	1	Bendix		Chicago, III		1	Motorola	2
Sumter, S. C	1	1	Bendix		SrL-SF				
Sumter, S. C	1	1	Bendix		Springfield, Mo	2.1	1	G. R. S.	15
Savannah, Ga Rocky Mount, N. C Fayetteville, N. C	6	3	Bendix Bendix		Fort Scott, Kan	11	2	Westinghouse	4.4
Rocky Mount, N. C	3	1	Bendix		Memphis, Tenn	1	1	Bendix Bendix	* *
Montgomery, Ala	2	1	Bendix		Southern	1	* *	pendix	**
Dothan, Ala	2	1	Bendix		Chattanooga, Tenn	14	2	Westinghouse	3
Thomasville, Oa	1	1	Bendix		Birmingham, Ala		2	Westinghouse	
CofG	4	1	Motorola		Atlanta, Ga	9	4	Westinghouse	24
Savannah, Go	4	2	Motorola		Asheville, N. C	3	1	Motorola	12
Macon, Ga	4 3	3	Motorola		CNOMIP			141-41-4	
CaWC	3	1	Motorole		Cincinnati, Ohio		1	Westinghouse	3
Augusta, Ga	4	4	Bendix		Meridian, Miss	4	1	Westinghouse	3
Spartanburg, S. C.	2	1	Bendix		NOT	-		** estingnouse	
CRWCS					New Orleans, La	7	1	Westinghouse	
Eole, III	4	2	Bendix		SP				
W. Quincy, Mo	3	1	Bendix		Yuma, Ariz	5	2	Motorola	* 5
Kansas City, Mo	1		Bendix	1.1	Dhanda Ada		**	Hallicrafter	6
Minneapolis, Minn	6	1	Ry. R. Tel.		Phoenix, Ariz	5	3	Motorola Hallicrafter	12
System	24		Ry. R. Tel.		Oxnord, Cal	5	1	Motorola	1.4
CRIAP	-				Sacramento, Cal	8	1	Motorola	
Topeka, Kan		1	Motorola		Tracy, Cal		1	Hallicrafter	6
El Reno, Okla	3	1	Motorola		Stockton, Cal	- 6	1	Motorola	* *
Muscatine, lowa	4	1	Motorola		Bakersfield, Cal	5	2	Motorola	* *
Council Bluffs, lowa	3	1	Motorola Motorola		TANO		0.0	Hallicrafter	6
Fort Worth Tex	5	1	Motorola		Houston, Tex	20	4	Motorola	12
Fort Worth, Tex Memphis, Tenn	2	1	Motorola		SPAS		-	1410101010	
Herington, Kan,	2		Motorola		Vancouver, Wash	22	1	Bendix	**
Peoria, III,	1	4.5	Motorola		Portland, Ore		1	Bendix	* *
CSSASB		4	Minute		UP				
Burnham, III	* *	1	Motorola		North Platte, Neb		1	Motorola Motorola	4 2
Erwin, Tenn	3	1	Motorola		Deaver Colo	* *	0.0	Motorola	1
DARGW		,	retororora		Denver, Colo Salt Lake City, Utah	4	0.0	Motorola	
Grand Jet., Colo	4	3	Bendix		Cargnite, Wyo		1	Motorola	
			Motorola	16	Wabash				
Grand Jet., Colo	19		Bendix		Lafayette, Ind	1	1	Motorola	* *
Denver, Colo	9.0		Bendix	0.0	WP	-		n	
DMAIR	5	1	Ry. R. Tel.		Son Francisco, Cal	5	1	Bendix Bendix	* *
Biwabik, Minn	3	9	Ry. R. Iei.	**	Oakland, Cal San Jose, Cal	4	1	Bendix	* *
E. Joliet, III		3	Motorola	3	Stockton, Cal	8	1	Bendix	**
Erie			1110101010		ordenist, contribution		1	Doglittle	2
Cleveland, Ohlo	5	1	Federal		Sacramento, Cal	7	1	Bendix	
New York, N. Y	51	1.1	Westinghouse		Oroville, Cal	2	1	Bendix	**
GN			ED At		Portola, Cal	· v	1	Bendix	* *
Kelley Lake, Minn			Bendix		Elko, Nev San Francisco, Cal	21	1	Bendix Bendix	* *
GMAO Tenn	5	1	Motorola	7	San Francisco, Cal	3.	8.5	Bendix	* *
Jackson, Tenn	3		PHOTOTOR	,	Jan Francisco, Californio		* *	Deliuix	
Birmingham, Ale	3		Motorola		Totals	424	103		188
		1	Motorola	4	Section 2010				
Memphis, Tenn,									
Memphis, Tenn	4		Bendix		Automobile Tueboat		-		

NEW MILEAGE OF TELEPHONE AND TELEGRAPH CIRCUITS INSTALLED IN 1953

	Long-	ileage of Distance cults	New M	ileage of	Printing-	ileage o Telegraph cuits		Long-I	ileage of Distance cuits	New M	ileage of th Circuits	Printing-	lileage of Telegraph cuits
Railroad	Wire	Conter	Wire	Carrier	Wire	Conter	Railroad	Wire	Carrier	Wire	Carrier	Wire	Corrier
ATASF	677 694	260 4,368	***	* * *	* * *	8,606 314	NYNHAH NAW NP.	96 387	1,025 400	• • •		• • •	999 478
BAO	369	288 116		45,314	2,298	17,096	ONR	0 0 0	2,340				200
CPR	30	3,191	***	21,791	6,195	37,211	PRR	***	23	***	***	20	101
CAIM	121	***	***	***	***	496	SAL	510	670	***	***	314	***
CANW	100	***	***	***	100	***	Southern	232	1,313			15	1,619
CRIAP	63	1,291	***	***	134	756	AGS	170	153	***	***	335	***
DARGW	21	63	***	***	497	***	SP	499	909 368	***	***	***	***
EJAE			211	***	***	59 240	TANO	***	230 201	***	444	***	460
GM&O	72	302 185	***	***		240	SPAS	***	248	***	***		***
NYC	148	***	***	***	***		UP	1,471	2,104	396	***	35	21,929
BAA	43.5	***	***	***	343	***	WP	***	2,790	***	***	33	804
NYCASIL	255	379	* * *		109		1 otals	6,569	22,554	396	67,105	10,081	91,351

COMPARISON OF COMMUNICATIONS FACILITIES INSTALLED IN THE UNITED STATES AND CANADA

	1953	1952	1951	1950	1949	1948
Miles of new or rebuilt pole line. Miles of new copper line wire Increase in miles of road dispatched by telephone New mileage of long-distance telephone circuits. New mileage of telegraph circuits. New mileage of printing telegraph circuits. New mileage of printing telegraph circuits. New mileage of communications circuit derived by use of carrier.	7,314 23,902 2,876 29,123 67,501 101,432 181,010	7,101 19,348 2,446 50,909 113,417 175,696 329,876	7,141 14,838 1,600 19,201 47,260 28,058 84,769	6,319 8,665 1,792 18,105 58,075 33,051 98,380	11,349 15,558 1,143 38,110 45,061 38,684 113,960	7,908 19,833 1,446 25,087 24,395 31,036 47,191
Total mileage of new communications circuits	198,056	340,022	94,519	109,231	121,855	80,518
Road train communications Number of locomotives equipped	808 500 151 566	664 383 80 348	615 926 95	205 183 29	132 75 81	168 129 71
was a second of	2,025	1,475	1,636	417	288	368
Yard radio communications Number of locomotives equipped. Number of fixed stations. Number of walkie-talkie sets	424 103 188	327 99 103	253 52	54	129 21	240 43
	715	529	305	242	150	283
Yard loudspeaker systems Number of control points Number of two-way speakers Number of paging speakers	66 1,015 351	161 1,906 771	79 806 305	104 1,140 387	114 936 591	161 1,016 775
Total number of speakers	1,366	2,677	1,111	1,527	1,527	1,791
Intercommunications systems, freighthouses, etc. Number of control points. Number of telephones. Number of loudspeakers.	187 596 604	305 338 779	***	***	## 1 ## 1	***
Total number of telephones and speakers Total number of communications equipment units	1,200 5,306	1,117 5,798	3,052	2,186	1,965	2,442

INTERCOMMUNICATIONS SYSTEMS INSTALLED IN 1953 IN FREIGHTHOUSES, SHOPS AND OFFICES

	No. of Control	No. of Tele-	No. of Loud-		No. al Control	No. of Tele-	No. of Loud-		No. of Control	No. of Tele-	No. of Loud-
Railroad and Location	Points	phones	speakers	Railroad and Location	Points	phones	speakers	Railroad and Location	Points	phones	speakers
ATASE				Weehawken, N. J	1	23	28	Louisville, Ky	9		3
Belen, N. M,	1		7	Hornell, N. Y	1	16*	12	Washington, D. C	9	6	
Chicago, III	5			Marion, Ohio	1	3*	3	Washington, D. C	6	-	
Fullerton, Cal	1		5	Chicago, III	5	38*	13	Charlotte, N. C	1	7	
Gallup, N. M	-	4.5	5	FEC	-		, .	Columbia, S. C	1		5
Los Angeles, Cal	1		1.0	Miami, Fla	9	11	11	Coster, Tenn,	1	28	24
San Bernardino, Cal	3		3*	IC	-			John Sevier, Tenn	1	25	10
Santa Ana, Cal	1		6	Decatur, III	9	* *		Spencer, N. C	1	50	30
Wichita, Kan	3		54	LAN		* *		CNOATP		20	30
BAA				Louisville, Ky	1			Citico, Tenn	A		14
	-			MeC				Somerset, Ky	1		7
Hermon, Me	9	1	1	PT Portland, Me		21	1	SD Domester, Ky	,	0.0	,
CofGa				M-K-T			,	Sacramento, Cal	5		
Columbus, Ga	4	4	10	Dallas, Tex	4	19	12	Sparks, Nev	- E	4.4	6
Macon, Ga	4	4	10	MP	-	1.5	12	TANO	3	9.9	2
Atlanta, Ga	1	1	4	St. Louis, Mo	4	9	10	Houston, Tex	0		48
CAO				Kansas City, Mo	- 1	7	25	LaFavette, La	4	4.4	90
Cincinnati, Ohio	2	651	4	St. Louis, Mo		14		SPAS	,	4.4	2
PM	3	031	~	NYC	3. 4	1.4	x *	Vancouver, Wash	0		40
Detroit, Mich			5	New York, N. Y	9	8		TAP	2	* 4	4
Chicago, III	3		12	Ashtabula, Ohio	7		7	New Orleans, La	0	27	30
Chicago, III		* *	0	NAW	,	* *	,	New Orleans, La	4	3/	30
CRIAP		**	Z.	Norfolk, Va	7	13	13	Avondale, La		0	6
Chicago, Ill			0	NP	,	13	13	Fort Worth, Tex		14	0
Rock Island, Ill	*			Fargo, N. D	2	181	8	Dallas, Tex	×	14	á
DARGW		* *			3	361	0	UP Canas, 1ex	- 8	9	X
Denver, Colo	-	39	6	Billings, Mont		200	9			19	2
DMAIR		34	0		×	* *	3	Pocatello, Idaho		13	Z.
Duluth, Minn				Reading Saucon Creek Yd., Pa	2				~		
	6	6	6		×	4.4	1	St. Louis, Mo	×	0.00	* *
EJAE			4.0	StL-SF		-					
E. Joliet, Ill	1	**	13	Tulsa, Okla	2.5	5	4	Sacramento, Cal	2	1.1	11
Erle				SAL	-			*	4.0.0		
New York, N. Y	11	13	15	Savannah, Ga	9	18"	16	Totals	187	596	604
Jeney City, N. J	2	9	15	Southern				* Two-way speakers.			
Jersey City, N. J	1	7	8	Atlanta, Ga	2		1.1	† Telephone outlets for car	checking	I.	

to read aloud car names and numbers of inbound and outbound freight trains as they pass him, so the information may either be (1) recorded on a tape recorder or other type of recording machine, or (2) taken down by a man in the yard office listening to the broadcast. Car inspectors also use walkie-talkies when inspecting a train prior to departure, for talking to each other when making the air brake test, and to notify the lead car inspector of defects or "OK's." On the Union Pacific and Southern Pacific the walkie-talkies are used in conjunction with a base radio station; and on the Frisco they are used in conjunction with the paging speakers in the yard.

To expedite yard operations, 27 railroads installed

loudspeaker systems in 45 yards during 1953. In these systems, the yardmaster at a central location can communicate with foremen of the yard crews as they proceed with their work. Calling personnel over high-volume paging speakers has annoyed some residents who live near freight yards, especially at night. To overcome these objections, some railroads use group paging over low-volume talk-back speakers. During 1953, the Southern Pacific installed talk-back speakers arranged for group paging at Sparks, Nev., San Jose, Cal., and Phoenix, Ariz.

During 1953 many roads reduced operating expenses in their l.c.l. freighthouses by using centralized checking. In these systems, the checkers with waybills are located

YARD LOUDSPEAKER SYSTEMS INSTALLED IN 1953

	No. of	No. of	No. of	Rai	Iroad and Location	Points	Speakers	Paging Speakers
	Control	Two-Way	Paging	CCCASIL				
Railroad and Location	Points	Speakers	Speakers	Petersburg	g, Ind	2		4
ATASF					d, III	2		4
Amarillo, Tex	1	30	9	NYNHAH	19, III	*	**	-
Belen, N. M	2	29	**		er, N. Y			1.4
Chicago, Ill	1	19	* *	Maybrook	N. Y	*	**	2
ACL				Reading	17. 1	0.4	* *	2
Rocky Mount, N. C	1	58	34		k Yard Pa	4	9	18
BAO				StL-SF				10
Willard, Ohio	2	19	10		Alg	1	62	12
BAM	_			SAL			02	
Mystic Jet., Mass	5	23	4		3a	3	7	17
CAO		1	-	500				
Peach Creek, W. Va	1	50	9		Minn	1	3	2
	-			Southern			-	_
Omaha, Neb	5	* *	10	Evansville, l	nd	1	5	4
Silvis, III				Coapman, II	L	1		3
DARGW	2.0	2	* *	Greensboro.	N. C	2	86	17
Grand Jet., Colo	2	32	29	CNOATP				
Erie	×	31	3.8	Oakdale,	Tenn	1	4	**
Croxion, N. J	2		2	GS&F				
GN COMMON, 14. J.	2	* *	X.		Ga	2	35	* *
Spokane, Wash			4	NOANE				
IC	**	* *		New Orle	ans, La	2	41	
Chicago, III	2	2	15	SP				
Decatur, III		2		Sparks, Nev.		1	53°	
Birmingham, Ala	4	25	- 5		1	2	95*	
ICL	,	2.5	-		Z	1	74*	**
Jersey City, N. J	1		20	TANO				_
LAN					• K	1	67	7
Howell, Gg		**	1	Union				
MP					:k, Pa	2	38	4
Poplar Bluff, Mo	1	6	6	OP	N		0.0	
Van Buren, Ark	1	**	5	Wabash	Nev	1	33	· ·
NCASIL							04	19
Chattanooga, Tenn	1	45		Desetus III	0	0	26	19
NYC				Decarut, III.	***********	2	16	3
Syracuse, N. Y	1	20	51	Totale	**********	66	1.015	351
Buffalo, N.Y	1	**	3	management :		00	1,013	231
Ashtabula, Ohio	2	**	0	* Arranged for	oroug paging			

in an office, using control consoles with wire circuits running to locations along the loading docks. Crews at the cars use either portable loudspeakers or portable telephones to communicate with the checker. Using this system, one checker can work with several crews, thus speeding up checking operations.

Such systems have enabled many freighthouses to handle a greater volume of l.c.l. freight in less time than previously. Some railroads prefer to use telephone checking, i.e., men in the freight cars use portable telephones. The Missouri-Kansas-Texas installed telephone checking at Dallas in 1953. The Northern Pacific did the same in its Fargo, N. D., and Billings, Mont., freighthouses. Other railroads prefer to use portable loudspeakers (talk-backs), such as in the Santa Fe's 1953 installation at Wichita, Kan.

During 1953, the railroads installed new carrier equipment, rebuilt pole lines, strung new copper line wire and improved their circuit facilities at a pace that topped the average of the preceding five years. In 1953, the Santa Fe completed a system of mechanized car reporting and accounting with headquarters at Topeka, Kan. Such a system needs extensive circuits, particularly printing telegraph, which are provided by new wire, or carrier superimposed on existing wires. Voice-frequency telegraph and new types of carrier equipment are being used extensively by some railroads to provide these

Big demands for more circuits can be met quickly by installing microwave. For example, the Santa Fe microwave between Galveston, Tex., and Beaumont has capacity for 22 people to carry on conversations independently and simultaneously, and when used for printing telegraph even greater circuit capacity is available. Microwave is, of course, used extensively by oil companies, government agencies such as the Tennessee Valley Authority, and by

commercial telephone and telegraph companies. So far, only two railroads, the Rock Island and the Santa Fe, have installed microwave, but other projects are in the formative stage, some of the problems being to secure continuous service without even brief failures or fading, and to provide connections at several important offices along each railroad division.

No. of No. of

The thinking of some railroad men is that by spacing microwave stations only 10 or 15 miles apart, and putting them in duplicate, completely reliable service may be maintained, i.e., service with no outages. When the normal set fails, the standby automatically cuts in without loss of transmission. This system, say the proponents, will be able to provide any number of drops for local offices, as do present wire circuits. The ultimate is to have microwave replace line wire circuits, a development which is being given serious thought by railroad men who are plagued each winter with line wire breaks.

One of the early inventors of printing telegraph equipment introduced in 1953 a new lightweight high-speed printing telegraph machine which is designed to send and receive messages at the rate of 100 words per minute. Such speed of transmission may well increase the capacity of existing teleprinter circuits.

A new device, known as a compandor, was brought out last year, which will improve the quality of transmission of a telephone circuit (physical or carrier) by reducing noise and crosstalk, without the need for retrans-

posing the line.

In 1953, the Santa Fe installed a flood detector in a stream bed in western Arizona, which when actuated by rising flood waters, keys a radio transmitter which sends out Morse letters "GF." A receiving station six miles away "picks up" the signal, and puts it on the dispatcher's telephone line. Thus the dispatcher, 240 miles away in Winslow, Ariz., is warned of an impending flood.

Calendar of Labor and Wage Events-1953

By JOHN S. GALLAGHER, JR.

Associate Editor

AT THE BEGINNING of the year, moratorium provisions in existing agreements had brought about a condition of seeming calm. However, behind this calm was feverish union activity aimed at preparing new demands for presentation when the moratorium ended October 1, 1953. On December 29, 1952, a referee had ruled that the U. S. government's wage stabilization policy would permit "improvement."
stabilization policy would permit "improvement-factor" wage increases.

- Jan. 5 Hearings on the annual "improvement-factor" wage increase open before government referee.
- Jon. 15

 In Canada the Brotherhood of Railroad Trainmen seeks a 35 per cent increase in base wage rates, institution of an "escalator" cost-of-living clause, and a 40-hour week for yardmen. CNR and CPR counter with offer of 12 cents an hour in return for some working rule changes. Offer rejected, and union sets Feb. 2 strike date.
- Jon. 25
 Six operating unions strike on the Chicago Great Western in dispute over 600 unsettled grievances. All service on CGW stops.
- Feb. 1 Canadian roads work out compromise aettlement with B.R.T. on the basis of a 12 per cent pay increase and rule changes,
- Feb. 6 Wartime controls over all railroad wages and salaries discontinued as a result of Presidential order.
- Mar. 7 CGW settles disputes with six operating unions. Service restored Mar. 10.
- Mar. 18

 Government referee awards 15 non-operating unions and 4 operating unions 4-cents an hour "improvement-factor" wage increase, retroactive to Dec. 1, 1952.
- Mor. 30

 Wildcat strike of B.R.T. members ties up the Union Railroad (Pittsburgh) for five days. B.R.T. heads agree men were at fault in striking in protesting removal of two employees.
- Apr. 6 Drop in government's cost-of-living index results in a 3-cents per hour cut in pay for all railroad workers under escalator wage contracts.
- Apr. 10 Railroad and Airline Wage Board—which administered wartime governmental controls over railroad wages—terminated.
- May 15 Government cost-of-living Index remains unchanged,
- May 22

 Fifteen non-operating unions announce their 1954 wage demands: (1) Increased vacations with pay—5 working days for an employee with one year's service, 10 days for those with 2 years' service, and 20 days for all with 15 or more years' service. (2) Seven paid holidays, plus double-time for all work performed on a holiday, (3) Life, health and accident insurance with premiums paid by the railroads. (4) Time and half for all employees who work on Sundays as part of their regular assignment; double time when Sunday is a regular rest day. (5) Extension of pass privileges.
- May 22 United Transport Service employees present demands similar to those of the 15 non-operating unions.
- June 4 Brotherhood of Sleeping Car Porters presents wage demands similar to those of the 15 non-operating unions.
- James P. Shields, grand chief engineer of the Brotherhood of Locomotive Engineers, dies suddenly. Guy L. Brown elected his successor.
- July 10

 Order of Railroad Conductors renews its demand for a graduated scale of pay based "on weight on drivers of locomotives used" (first presented Mar. 15, 1949, and ultimately rejected by the railroads, the National Mediation Board, and last by an emergency fact-finding board on May 20, 1952). Railroads reject union's attempt to file claim while moratorium is still in effect.
- Sept. 1 D. B. Robertson retires as president of Brotherhood of Locomotive Firemen and Enginemen, He is succeeded by H. E. Gilbert.
- Sept. 2 O.R.C. calls strike to enforce its demand for change in pay rates before end of moratorium. On Sept. 3 agreement was reached whereby consideration of Conductors' request was deferred until termination of moratorium agreement Oct. 1.
- Sept. 23 Government's cost-of-living index brings 3-cent hourly wage increase to employees under escalator clause contracts.
- Oct. 1 O.R.C. again renews its request for a graduated scale of pay (see July 10 and Sept. 2, above).

- Oct. 1 B. of L.E. seeks to have 13-cents an hour increases gained under escalator contracts made permanent, plus a 30 per cent increase in base pay rates.
- Oct. 1

 B. of L.F.&E. seeks to have 13-cents an hour increases gained under escalator contracts made a part of the basic rates of pay. In addition, it seeks: 37½-cents an hour, or \$1 per 100-mile "day" pay increase; for employees in yard, transfer and belt line service, 75-cents an hour, or \$6 a day, increase; minmum pay for engineers in road service to be \$20, firemen \$18.
- Oct. 1

 B.R.T. seeks to have escalator-clause increases made permanent, and, effective Nov. 1, 1953, to increase all pay rates 37½-cents per hour, or \$3 per day.
- Oct. 1 Switchmen's Union of North America seeks to have escalator clause increases made permanent, a 40-cents an hour increase in basic pay rates, continuation of the escalator clause; a "shift differential" of 10-cents an hour for the second shift, and 15-cents for the third shift; double time for all work on holidays, guaranteed pay on holidays, double time (instead of time-and-a-half) for all overtime work, increased vacation allowances, a health and welfare plan, and the institution of sick leave.
- Oct. 20

 15 non-operating unions invoke services of the National Mediation Board in their move to obtain more favorable "fringe" benefits.
- Oct. 21

 Brotherhood of Railway Clerks strikes against Railway Express Agency in Milwaukee, Detroit and Pittsburgh to support demands for a 30-cent hourly wage increase. Similar demands being made in other cities. Nationwide strike called for Dec. 20.
- Oct. 27

 Beginning of arbitration proceedings with B. of L.F.&E. on question of alleged violation of certain provisions of so-called diesel agreements.
- Nov. 3 Railroads and non-operating unions meet under auspices of N.M.B. to discuss "fringe" benefits.
- Nov. 4 Railroads institute action in U.S. District Court at Chicago to determine whether the requests of various unions for health and welfare benefits and extended pass privileges are properly negotiable under the Railway Labor Act.
- Nov. 5

 American Train Dispatchers Association and the railroads agree to a wage increase of \$8 per month, with demands for extended vacations and sick leave to be determined later by collective bargaining.
- Nov. 30 Railroad Yardmasters of America seek a 45 per cent increase in base rates of pay, plus rule changes.
- Dec. 2 Preliminary negotiations start between railroads and B, of L.E., B. of L.F.&E., O.R.C., and B.R.T.
- Dec. 3 Negotiations between the railroads and S.U.N.A. start,
- Dec. 15 The O.R.C. and the railroads jointly invoke the services of the National Mediation Board.
- B.R.T. and railroads sign agreement in which all cost-of-living increases are made permanent, the escalator clause is cancelled, and all basic rates of pay increased 5-cents per hour or 40-cents per basic day. Dining car stewards receive an increase in basic mouthly pay of \$10.25, and yardmasters \$10.00. Vacation agreements are to be amended to provide, effective Jan. 1, 1954, 3 weeks vacation after 15 years' continuous service.
- President Eisenhower appoints a fact-finding board trhandle dispute between Railway Express Agency and B.R.T., thereby averting nationwide strike called for Dec. 20. Strikes at Milwaukee, Detroit and Pittsburgh ended.
- Dec. 18 Railroads offer "package agreement" similar to that signed by B.R.T. to B. of L.F.&E., and to the non-operating unions through the National Mediation Board.
- Dec. 28

 After 15 non-operating unions reject railroad "package offer," N.M.B. terminates services and President Eisenhower appoints emergency board.

AT THE END of the year there was considerable activity among the railroad unions, each striving to achieve a "better" wage agreement to improve its standing in the constant drive for members. The 15 non-operating unions have pushed their "fringe" benefit demands to the point where an emergency board has been appointed. On their part, the railroads are "bargaining hard" because they recognize that with traffic and revenues down they have very little room in which to move.



ONE OF 30 70-ton mechanically cooled Burlington refrigerator cars built by the Fruit Growers Express Company at Alexandria, Va.

32,114 Freight-Train Cars Ordered

By C. B. PECK Mechanical Editor

and FRED C. MILES

Associate Editor

F reight-train cars ordered last year for service in the United States totaled 32,114. Orders placed with domestic car builders, including cars ordered from abroad—in addition to orders placed with Canadian car builders by Canadian companies—are listed by purchaser in the accompanying detailed tabulation. Two smaller tables show summaries and analyses of freight-train car orders and deliveries from 1935 through 1952.

The detailed tabulation of United States orders was compiled by Railway Age from data submitted by purchasers and amplified and checked with information received from car builders through the cooperation and assistance of the American Railway Car Institute,

July 1953 was the original date set by Class I railroads in 1950 for the attainment of car ownership of 1,850,000 freight cars. Three months after this "target date" had passed, at the end of last October, the ownership was 1,774,772. This is an increase in ownership from the first of the year of 18,072 cars. It is more than 75,000 cars short of the July goal. To effect such an increase in ownership by December 31, 1954, the revised target date set in December 1952, will require the building of over 150,000 cars in 14 months, divided about equally between retirements and net additions to the Class I freight-car inventory.

What are the reasons for this lag in the ordering and building of freight cars? Among them are the ending of hostilities in Korea, the gradual change in emphasis by the administration at Washington as to the need for defense preparations, and a decline in carloadings since last September.

Number and Classification of Freight-Train Cars Ordered for Domestic Use

(Carbuilder and Railroad Shops)

Year	Box	Flat	Stock	Gondola	Hopper	Tank	Refrig.	Others	Non Rev.	Total
1952	6.726	2.404	0	8.169	10.147	3,778	2,689	1,508	161	35,582
1951	28.977	2.304	1.000	17.383	32,637	6.894	3.580	601	498	93.874
1950	68.661	3.937	500	33.094	8.651	7.505	14639	282	282	155,692
1949	2.852	60	0	244	1,131	834	1,050	5	47	6,223
	17.140	4.139	500	18,498	40,193	4.229	6.510	881	685	92.775
	30.490	636	150.	14.877	52.036	6,851	6.200	586	377	120,163
1947	80.500	1 173	0	4 577	15 511	4.825	10,253	153	201	67,193
1946	15 440	1.241		5 707	10,011	915	1.085	174	320	37.862
1945	21,066	823	300	6.750	10,500	070		271	E 9	54,481
1944	31,066	823	300	9,138	12,674	914	1,465	153	320	
1943	10,027	2,212	0	5,312	18,400	536	50		320	37,030
1942	2,351	2,300	0	9,711	10,197	2,716	0	1,285	0	28,560
1941	55,939	3,459	400	15,814	23,213	2,800	2,370	1,614	1,288	106,897
1940	35,530	885	350	9,654	14,446	1,671	785	1,965	542	65,828
1939	20,140	976	100	6,419	21,923	2,373	675	1,127	182	53,915
1938	7.912	931	568	4.279	2.017	230	0	299	134	16,370
1937	20,564	1.365	500	10.120	12.817	692	1.770	287	1.827	49.942
	21,866	1 224	453	8.782	22 271	5.745	7.495	100	1,812	69,748
1936	8,925	75	50	2,755	5,970	313	600	32	29	18,749

Source: American Railway Car Institute. Data for 1953 not yet available



MISSOURI PACIFIC 125-ton flat car with General Steel Castings integral underframe and Commonwealth six-wheel trucks.

During no month of the past year did freight car orders equal deliveries. Orders were placed for a total of 30,769 cars during the first 11 months of the year and 74,821 cars were delivered. The result is a decline in the backlog from 80,296 cars on order and undelivered as of January 1, 1953, to 31,869 on December 1.

Do the railroads need more cars? Throughout most of the year surpluses of freight cars have exceeded shortages. Nevertheless, for several weeks during the middle of the year box-car shortages ranged from over 1,000 to over 3,000 and, except for two weeks, were over 3,000 from late August to late October. Shortages of open-top cars ran over 1,000 from late August to the middle of October. By comparison with shortages which prevailed during 1950 and 1951, when shippers and government alike were incensed at the situation, these shortages were not serious. From the interest of the railroads themselves, however, they are a potential cause of a loss of business to competing transportation agencies which the railroads can ill afford to tolerate.

Will the railroads buy more cars in 1954? In October the railroads were warned by James K. Knudson, administrator of the Defense Transportation Administration, to take immediate steps to reach the goal of 1,850,-000 freight cars in service lest they be faced with puni-

Freight-Train Cars Delivered—Domestic and Export

Year	Car- builders	Railroad and Private Line Shops	Total	U.S. Export
1952	53,587	24,246	77,833	1,565
1951	67,744	28,199	95,943	50
1950	24,443	19.548	43,991	218
1949	62,955	29,607	92,562	2,610
1918	83,196	29,444	112,640	2,245
1947	52,990	15,532	68,522	27,721
1946	31,885	10,070	41,955	18,020
1945	31,011	12,853	43,864	10,658
1944	27,953	15,050	43,003	38,759
1943	24,616	7,220	31.836	43,117
1942	47,429	15,444	62,873	8,529
1941	63,396	15,227	80,623	2,386
1940	45,316	17,025	62,341	1,734
1939	19,491	5,641	25,132	381
1938	9,990	6,480	16,470	611
1937	61,929	15,569	77,498	1,321
1936	30,969	15,643	46,612	523
1935	5,965	1,550	7,515	1,263

Source: American Railway Car Institute.

tive action by government agencies. A change in defense psychology, or an increase in carloadings such that shortages of 30,000 to 50,000 cars might develop, would undoubtedly stimulate the placing of orders by individual railroads. Short of these changes, the goal of 1,850,000 freight cars will probably not inspire much fervor on the part of individual railroads.

Railroad Orders-For Service in the United States

				Le	ngth		Weight	Date of	Date of	
Purchaser	No.	Class	Capacity	Ft.	In.	Construction	Lb.	Order	Delivery	Builder
Aliquipps & Southern Atchison, Topeka &	17	Gondola	200,000	38	2	Steel		March	March '54	R. R. Shops
Santa Fe	500	Gondola	140,000	52	6	Steel	51,000	April	1953-'54	Pressed Steel Car
	50	Ore	180,000	27	0	Steel	68,400	February	December	Pullman-Standard
	250	Cov. Hopper	140,000	29	3	Steel	49,300	May	March '54	Pullman-Standard
	100	Cov. Hopper	140,000	41	1	Steel	61,800	September	May '54	Pullman-Standard
	500	Hopper	140,000	40	8	Steel	45,500	April		Amer, Car & Fdy,
Baltimore & Ohio	12	Caboose	80,000	23	4	Steel	59,000	March	1954	R. R. Shops
	100	Flat	140,000	53	6	Steel	61,900	March	1954	R. R. Shops
Bangor & Aroostook	5	Box	100,000	40	6	Steel	47,300	July	Feb. '54	Pullman-Standard
	500	Вок	100,000	40	6	Steel Frame	45,680	July	Feb. '54	Amer. Car & Fdy.
Bememer & Lake Erie	75	Gondola	140,000	65	6	Steel	63,400	January	SeptOct.	Pullman-Standard
Birmingham Southern	15	Hopper	140,000	29	3	Steel	50,400	May	November	Pullman-Standard
Cambria & Indiana	2	Caboose	60,000	21	10	Steel	4,000	February	March	Intl. Ry. Car
Central of Georgia	1,000	Box	100,000	40	6	Steel	46,300	March	November	Pullman-Standard
Chesapenke & Ohio	10	Box	100,000	40	6	Steel	46,000	November	Feb. '54	Pullman-Standard
	100	Pulpwood	100,000				******	May	****	1. R. Shops
	5	Hopper	140,000				******	August	******	R. R. Shope
Chicago & Eastern Illinois.	100	Gondola	110,000	41	3/4	Steel	42,800	February	December	R. R. Shops
	50	Flat	100,000	42	6	Steel underframe	57,000	September	Mar. '54	R. R. Shops
Chicago & North Western .	12	Caboone	60,000	30	0	Steel	48,000	February	Feb. '54	Intl. Ry. Car
	200	Gondole	140,000	41	6	Steel	49,500	February	NovDec.	Bethlehem Steel
	625	Box	100,000	40	6	Steel	45,600	January	OctNov.	Pullman-Standard
	1,000	Box	109,000	40	6	Steel	46,600	November	1954	Pullman-Standard
	30	Box	100,000	50	6	Steel	42,500	September		Amer, Car &Fdy.
Chicago, Burlington &	-				-					
Quincy	35	Caboone	80,000	30	0	Steel	53,800	August	July '54	R. R. Shops
	30	Cov. Hopper	140,000	29	3	Steel	51,900	May	Jon. '54	Pullman-Standard
	15	Air Dump	100,000	29	9	Steel	61,500	March	March '54	Baldwin-Lima-Ham-
Chicago Heights Terminal			2001000				01,000		memous wa	Oton
Transfer	25	Flat	140,000	53	6	Steel underframe	58,000	January	April	R. R. Shops
***************************************	25	Cov. Hopper	140,000	29	3	Steel	50,100	November	Mar. '54	Amer, Car & Fdy.
Chicago, Indianapolis &		out, moppes	****				44,244	11010000		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Louisville	150	Hopper	110,000	33	0	Steel	42,000	August	June '54	Pullman-Standard
	30	Hopper	140,000	41	0	Steel	62,000	March	November	Pullman-Standard
Chicago, Milwaukee, St.	-				-					
Paul & Pacific	100	Cov. Hopper	140,000	29	3	Steel	49,300	July	March '54	Pullman-Standard

Railroad Orders—For Service in the United States (cont.)

Purchaser	No.	Class	Capacity		ngth . Iu.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Chicago, Rock Island & Pecific	100	Gondola	140,000	65	6	Steel	62.500	March	October	Fullman-Stendard
Clinchfield	100	Flat Box	250,000 100,000	57 40	6	Steel Steel	125,000 46,500	May June	1st qtr. '54 Mar. '54 Mar. '54	i'. R. Shops Amer. Car & Fdy.
Dels ware & Hudson	75*	Air Dump Cov. Hopper	100,000	31	10	Steel	59,000 51,300	June	November	Magor Pullman-Standard
Denver & Rio Grande	25	Cov. Hopper	140,000	29	3	Steel .	51,300	May	November	Puliman-Standard
Duluth, South Shore &	25	Cov. Hopper	140,000	29	3	Steel	51,700	February	October	Pullman-Stendard
Atlantic	100	Box Box	100,000	40	6	Steel	45,000	January January	September 1953	Pullman-Standard Amer. Cor & Fdy.
Pela	100	Gondola Flat	100,000 350,000	60	6	Steel Steel	44,000	February	November December	Amer, Car & Fdy.
Erie,	300	Flat	280,000	57	9	Steel	148,000	April May	December	Greenville Steel Car R. R. Shops
	200	Gondola Box	140,000	52 50	6	Steel -	62,700 60,000	August	FebMar. '54 1st half, '54 JanFeb. '54	Greenville Steel Car R. R. Shops
Fort Worth & Denver	500 256	Box	100,000	40	6	Steel	46,000	August June	December	Pullman-Standard CB&Q Shops
Grand Trunk Western	200 100	Gondola Flat	140,000	50 56	6	Steel	54,600 58,400	November November	Feb. '54	General American
	100	Box Air Dump	100,000	50	634	fteel fteel	56,100	November	lst qtr. '54 lst qtr. '54 Mrr. '54	Amer. Car & Fdy. Amer. Car & Fdy.
Gulf Coast Lines	100 25	Box Box	100,000	40	6	Steel Steel	46,000 47,000	December December	1954	Magor R. R. Shops
Gulf, Mobile & Ohio	400	Gondola Flat	100,000	41 63	6	Steel Steel	44,300 57,200	January April	OctNov. November	R. R. Shops Amer, Car & Fdy. R. R. Shops
	1 100	Flat Woodrack	280,000 100,000	18	8	Steel Steel	141,000 42,500	May	1954 1953-'54	R. R. Shops R. R. Shops
	50	Ore	180,000	31	8	Steel	61,600	March	Jan. '54	Pullman-Standard
Illinois Central	100	Gondoln Cov. Hopper	100,000	40 29	6 3	Steel Steel	51,200 52,700	1953 October	1953 April '54	R. R. Shops Amer. Car & Fdy.
Illinois Terminal	15	Cov. Hopper Caboose	140,000 80,000	29 33	3 7	Steel Steel	51,000 52,000	November February	December	Amer, Car & Fdy. St. Louis Car
International-Great Northern	100	Box	100,000	40	6	Steel	46,000	December	1954	R. R. Shops
Kanssa City Southern	25 200	Flat	100,000	50 53	6	Steel Steel	47,000 53,000	December June	1st half '54	R. R. Shops Amer. Car & Fdy.
Lehigh Valley	1	Flat	250,000	57	9	One piece cast	124,600	May	Jan. '54	R. R. Shops
	100	Cov. Hopper	140,000	26	3 36	steel U-frame Steel U-frame	53,000	June	JanMay '54	R. R. Shops
Louisville & Nashville	250 500	Ore Gondole	190,000	29 52	6	Steel Steel		March February	MarApl. '54 Mid '53	Pullman-Standard Bethlehem Steel
	1,000 500	Box Box	100,000	40 50	6	Steel Steel		February February	Fall '53 4th qtr. '53	Pullman-Standard Pressed Steel Car
Maine Central	15	Cov. Hopper Pulpwood	140,000	27 45	9	Steel Steel	51,000 46,500	April September	October Jen. '54	Bethlehem Steel Bethlehem Steel
Minneapolis, Northfield & Southern	100	Box	100,000	40	6	Steel	45,600	November	March '54	Pullman-Standard
Missouri-Illinois	100	Cov. Hopper Flat	140,000 100,000	53	6	Steel Steel	57,800 52,000	December July	lst qtr. '54	R. R. Shops Amer. Car & Fdy.
Missouri-Pacific	300 80	Box Auto	100,000	40 50	6	Steel Steel	45,500 55,000	July July		R. R. Shops R. R. Shops
New York Central	100 25	Pulpwood Box	100,000	38	6	Steel Frame	42,500 46,000	February August	October Jan. '54	R. R. Shops Pullman-Standard
New York, Chicago &	2	Fint		44	4	Cast Nickel Steel	99,400	October	April '54	Despatch Shopa
Bt. Louis	1	Flat	500,000	44	4	Steel	100,000	September	Mar. '54	R. R. Shops
& Hartford	100	Flat Flat	400,000 100,000	71 40	10	Steel	191,600 48,200	February September	December 1st half '54	R. R. Shops R. R. Shops
Norfolk & Western	500 25	Hox Flat	100,000	49	856	Steel Steel	45,000 51,000	May May	lst qtr. '54 lst qtr. '54	Pullman-Standard R. R. Shops
Northern Pacific	500	Refrigerator	100,000			Steel	59,000	January	1954	R. R. Shops
Pennsylvania	70	Box Flat		50 50	6	Steel Steel	54,200 367,600	January July	December June '54	R. R. Shops R. R. Shops
	300 20	Cov. Hopper Box	140,000	40	6	Steel Steel	46,100	August October	April '54 Feb. '54	Pullman-Standard Pullman-Standard
St. Louis-San Francisco	200	Air Dump Ore	180,000	31	10 8	Steel Steel	59,000 61,600	June March	March '54 Feb. '54	Magor Pullman-Standard
	300 500	Gondola Box	100,000	52 40	6	Steel .		April October	NovDec. lat qtr. '54	Pullman-Standard Pullman-Standard.
	100 300	Hox Hopper	110,000	50 33	6	Steel Sreel	56,200 43,200	October March	Merch '54 April '54	Pullman-Stendard Pullman-Standard
Bt. Louis Southwestern	75	Flat Gondola	140,000	42 52	6	Steel Steel	41,800 57,600	April February	Feb. '54 August	Amer. Car & Fdy. Bethlehem Steel
Savannah & Atlanta	150 300	Gondola Box	140,000 100,000	52 40	6	Steel	57,600 46,300	November March	March '54 Jan. '54	Bethlehem Steel Pullman-Standard
Seaboard Air Line	300 200	Woodrack. Hopper	170,000	45 39	9	Steel	46,500 50,300	July September	1953-'54 lat qtr. '54	Bethlehem Steel Bethlehem Steel
Southern	400 250	Cov. Hopper Ore	140,000 190,000	29 29	8	Steel Steel	48,000 62,000	July March	1st qtr. '54	Amer. Car & Fdy. Pullman-Standard
	320 75	Cov. Hopper Flat	140,000	40 53	6	Steel underframe	62,000 61,800	May July	Jan. '54 1953-'54	Pullman-Standard Thrall Car
Southern Pacific	200 300	Gondola Gondola	140,000	52 52	6	Steel Frame	58,800 56,000	January January	SeptOct. OctNov.	Amer. Car & Fdy. Amer. Car & Fdy.
	500 500	Hopper Hopper	140,000	40	634	Steel Steel	47,600	January January	1953 4th qtr. '53	Pullman-Standard Bethlehem Steel
	225 150	Cov. Hopper Cov. Hopper	140,000	41 29	374	Steel Steel	50,600	January January	1953-'54 November	Puliman-Standard Puliman-Standard
	100 250	Air Dump Box		\$0	6	Steel Frame	60,800 52,300	January August	1953-'54 AugSept.'54 1954-'55	Baldwin-Lima-Ham, R. R. Shops R. R. Shops
Spokane, Portland &	1,000	Auto. Box	100,000	50	6	Steel Frame	\$7,500	August		
Seattle	12 250	Caboose		30	6	Steel	47,000 45,400	March April	Jan. '54 May-July '64	NP Shops R. R. Shops
Texas Mexican	20	Gondola	140,000	52	6	Steel Frame	60,000	June	Jan. '54	Pullmen-Standard
Union (Pittaburgh)	500	Gondola Gondola	140,000	42	0	*****	55,000	1953 1953	1953-'54 1953	R. R. Shops Greenville Steel Car
Wabash	250 200	Gondola Box	100,000	42 50	6	Steel		March	1953 October	Warren Car Amer. Car & Fdy.
Western Maryland	40 250	Cov. Hopper Gondola	140,000	41 52	6	Steel Steel	59,000	April October	Jan. '54 Mor. '54	Pullman-Standard Bethleham Steel
Western Pacific	300	Well Gondola	180,000	46	3	Steel Steel	55,000	Jonuary June	November Jan. '54	Greenville Steel Car Pullman-Standard
	10	Box	100,000	40	6	Steel	48,300	August	Feb. '54	Pullman-Standard

^{*}Lessed from the Equitable Life Assurance Society.

Private Car Lines and Other Orders—For Service in the United States

Purchaser	No.	Class	Capacity		ngth In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
American Agricultural Chemical Co	6	Tank	9,850g	. 34	0	Steel	55,400	July		Amer, Car & Fdy,
Allied Chemical & Dye Corp Barrett Division General Chemical Div	2 50	Tank Tank	10,000g 140,000	. 38	0	Steel	60,000	November October	April '54 Feb. '54	General American General American
American Refrigerator Transit Co American Rolling Mill Co.	600	Tank. Refrigerator Air Dump	7,300g. 80,000 100,000	30 34 31		Steel Steel	60,000 59,000		2nd qtr. '54 March '54	Amer, Car & Fdy. Pacific Car & Fdy. Magor
American Smelting & Refining Co Anchor Gasoline Corp	14 25 25	Cov. Hopper Tank Tank	140,000 100,000 11,000g.	29		Steel	49,700 65,200		August Feb. '54	Greenville Steel Car General American Amer. Car & Fdy.
Armco Steel Corp Arthur Equipment Co Atlas Powder Co	25 15 25 3	Tank Gondola Cov. Hopper Tank	11,000g. 100,000 140,000	35 41 34	2 1/8	Steel Steel Frame	65,000 43,350		November March '54 Feb. '54	Amer. Car & Fdy. Amer. Car & Fdy. Thrall Car General American
Best Foods, Inc	6 10 10	Tank Tank Tank	8,000g. 100,000 8,000g.		674	Steel	49,100	October January	July April '54 August	Amer. Car & Fdy. General American. Amer. Car & Fdy.
Buffalo Electro-Chemical Co	1 2	Tank Tank	6,000g. 8,000g.	30 33	1134	Steel Steel	34,800 37,040	July July	*****	Amer. Car & Fdy. Amer. Car & Fdy.
Burlington Refrigerator Express Co	30 100 200	Mech. Befrigerator Refrigerator Refrigerator	128,000 106,000 100,000	44 33	516	Steel Steel Steel	81,600 62,850	April April December	September November 1954	Co. Shope Co. Shope Co. Shope
Consolidated Chemical Industries	15 18	Tank Tank	140,000 140,000 9,850g			Steel	54 700	January July	December Feb. 54	General American General American
Continental Blacks E. I. du Pont de Nemours	17 3 15	Tank Tank Cov. Hopper	4,100g. 140,000	25 45	11 16	Steel Steel Frame	54,790	June November August	December	Amer. Car. & Fdy. Amer. Car & Fdy. Throll Car
& Co Electro Metallurgical Co	60 5 5	Tank Ore Cov. Hopper	100,000 140,000 140,000	20 29	9 3	Steel Steel	44,500 50,600	October August May	March '54 April '54 November	General American Greenville Steel Car Pullman-Standard
Ethyl Corp	17	Tank Tank	100,000 3,000g.	27		Steel	50,000	September September	March '54	General American Amer. Car & Fdy.
Frontier Tank Car Co Fruit Growers Express Co.	8 20	Tank Tank Refrigerator	140,000 80,000 130,000	37	8	Steel	80,000	May May April	Feb. '54 Jan. '54 1954	General American General American Co. Shopa
	100 280 2	Mech. Refrigerator Refrigerator Mech. Refrigerator	107,000	33 44	51/2 21/4 51/2	Steel Steel Steel	81,600 61,250 81,600	April April August	1954 March '54 1953	Co. Shops Pac. Car & Fdy. Co. Shops
General American Transportation Corp	245 31 600	Box Cov. Hopper Refrigerator	100,000	**	**	Steel	******	July 1953 1953	1954	Greenville Steel Car General American General American
Great Lakes Steel Corp	817 110	Tank Hopper	140,000	40	8	Steel	61,700	1953 November	April '54	General American Greenville Steel Car
Walter Haffner Co	3	Tank	80,000	**		04-15	*****	June	Jan. '54	General American
Harbor Tank Line Co Inland Steel Co	12	Tank Gondola	140,000	36	0	Steel Frame Steel Frame	******	July	March '54 December	Thrail Car Thrail Car
International Paper Co	8	Pulpwood	100,000	45 31	9	Steel	46,500 59,000	September December	Jan. '54	Bethlehem Steel
Kaiser Steel Co Keith Railway Equip	40 10 5	Air Dump Tank Tank Tank	8,000g. 8,000g.	33 33 33	614	Steel Steel Steel	42,245 43,700 85,600	March August November	March '54 December December	Magor Amer, Car & Fdy, Amer, Car & Fdy, Amer, Car & Fdy,
L. J. & M. LaPlace Lone Star Producing Co Merchants Despatch	2 50	Tenk Tank	10,000g.	33 33	9 1/2 6 1/8	Steel Steel	65,200 49,210	November April	******	Amer. Car & Fdy. Amer. Car & Fdy.
Transportation Corp National Sugar Refining Co.	100	Refrigerator Cov. Hopper	83,000 140,000	40 41	4	Steel	51,300 61,800	January June	September Jan. '54	Despatch Shops Pullman-Standard
National Tube Co National Zinc Co	5 6	Tank Ore Tank	140,000	33	614	Steel Frame	85,660	May September June	Jan. '54 Jan. '54 Feb. '54	Amer. Car & Fdy. Thrall Car General American
North American Car Corp. Olympic Portland Cement Co.	100	Cov. Hopper	140,000	29	3	Steel	50,500 50,800	October	Feb. '54 November	Pullmen-Standard Pullmen-Standard
Co	10 100 100*	Pulpwood Refrigerator	100,000 135,000 130,000	43	9	Steel Frame	46,500 71,500	September February	Jan. '54 1953-'54	Bethlehem Steel S. P. Shops S. P. Shops
Phillips Petroleum Co	250 25 150	Refrigerator Tank Tank Tank	100,000	35	276	Steel Frame	76,000	February March August	Jan. '54 Feb. '54 December	General American
Propane Gas Ser. Co Pullman-Standard Car	3	Tank	11,000g.	35	23%	Steel	66,400	April February	September	Amer, Car & Fdy, Amer, Car & Fdy,
Mfg. Co	10	Box Gondola Tank	100,000 100,000 10,000g.	40 45 33	9 14	Steel Frame Steel	45,100 62,000	August September April	Feb. '54 Jan. '54	Pullman-Standard Thrall Car Amer. Car & Fdy.
Standard Ultra. & Color	40	Cov. Hopper	140,000	29 33	676	Steel	48,000 43,000	November	December	Amer. Car & Fdy. Amer. Car & Fdy.
Tennessee Fastman Co Texas Natural Gas Corp	2 50	Tank Tank	100,000	* *		*****	*****	November	April '54 Jan. '54	General American General American
Union Tank Car Co	50	Tank Tank	100,000	**	**	******	70,000	September January	Jan. '54 1953	General American Co. Shops
United Fuel Gas Co	150 300 50 5	Tank Tank Tank Tank	100,000 100,000 100,000 100,000	**		******	70,000 52,000 57,000	August August August March	1954 1954 1954 Jan. '54	Co. Shops Co. Shops Co. Shops General American
United States Transpor- tation Corps	8	Flat Flat	400,000	45 73	0	Steel Steel	107,000 141,000	February February	May-June June-July	Pullman-Standard Pullman-Standard
	320 32 2	Hopper Box Tank Flat	110,000 100,000 7,000g.	33 40 29 50	6 6 4 1/4 0	Steel Steel Steel Steel	43,200 45,100 35,500 85,000	June September January April	May '54 1st qtr. '54 October	Pullman-Standard Pullman-Standard Pullman-Standard Amer. Car & Fdy, Amer. Car & Fdy,
Warren Petroleum Corp	250	Tank	11,000g.				******	*****	*****	Amer. Car & Fdy.
Western Fruit Express Co	250 50 250 300	Tank Mech. Refrigerator Refrigerator Refrigerator	140,000		0	Steel Steel Stool Frame	61,000	December December January	1954 1954 November	Amer. Car & Fdy. Co. Shops Co. Shops Pacific Car & Fdy.
THE R. P. LEWIS CO., LANSING, MICH.										

^{*}To be equipped for mechanical refrigeration.



A 55-TON HOPPER CAR, with Waugh (Duryea) cushion underframe, built by the Bethlehem Steel Company.

United	States-Export
O IIII CA	PINICE PYDOLL

Purchaser	No.	Class	Capacity		ngth In.	Construction	Weight	Date of Order	Date of Delivery	Builder
Canadian General Transit										
Co	1	Tank	100,000					January	December	General American
	1	Tank	140,000					January	Feb. '54	General American
	2	Tank	140,000					February	May	General American
	1	Tank	100,000					February	December	General American
	1	Tank	80,000					March	December	General American
	1	Tank	140,000			*****		June	Feb. '54	General American
Compania Minera de										
Penoles, S. A. (Mexico) Compania Petro California	20	Gondola	100,000	41	6	Steel	44,400	February	November	Amer. Car & Fdy.
(Guatemala)	9	Tank	80,000					May	Morch '54	General American
Consumers' Co-Operative		Tank	80,000	0 0				Niny	March 34	General American
Refineries Ltd. (Canada)	9	Tank	11,000g.	35	8	Steel	65,200	November		Amer, Car & Fdy.
Esso Standard Oil Co.:		A SILLIE	II,000g.	99		CHEER	03,600	Movembel		Amer, Car & Pay.
For Costa Rica	9	Tank	60,000					March	July	General American
For Honduras	1	Tonk	60,000	0.0				July	Feb. '54	General American
For Colombia		Tank	6,000g.	31	3	Steel		July		Amer. Car & Fdy.
Ferrocarril del Pacifico	-	3 61.11%	o,oog.	49.8		Stoci	11110	July		Amer, our a ray.
(Mexico)	180	Box	100,000	40	6	Steel	43,200	January	September	Pullman-Standard
(MARASONY	200	Box	100,000	40	6	Steel	44,800	March	NovDec.	Pullman-Standard
Mozambique Ry. (Portuguese		IPUL	104,000	***		1.76000	44,000	MINICH	14041760.	I dilibati-Mandard
East Africa)	398	Gondola	88,000	45	6	Steel	41,000	August	2nd qtr. '54	Magor
National of Mexico	300	Hopper	140,000	33	0	Steel	47,000	October	2nd qtr. '54	Magor
Union Miniere du Haut	300	mobbot	1.40,000	0.0		196668	41,000	October	zna der. oa	Magor
Katanga (Belgian Congo)	24	Air Dump	100,000					1953	1953	Beldwin-Lima-Hem.
Daniel Vela, S. A.	-4	terr vermit	100,000	0.0	0.0			1793	1700	buld win-Tuma-Ham.
(Mexico)	5	Tank	80,000					February		General American

Canada

Purchaser	No.	Class	Capacity	Len Ft.	In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
British American Oil Co	50	Tank	12,500 U.S. Gal.	40	1	Steel		May	1953-'54	Can. Car & Fdy.
Canadian National	100 1,200 1,200 1,400 210 250 500 100 300 15 15 200	Flat Box Hart Convertible Box Loag. Hopper Box Gondola Box Triple Hopper Air Dump Stock Cov. Hopper	60,000 100,000 100,000 100,000 140,000 140,000 140,000 140,000 140,000 60,000 140,000	40 40 42 40 40 52 35 40 31 35 36	6 6 8 6 6 6 10 8 7 10 0	Steel Underframe Steel Frame Steel Steel Steel Steel Steel Steel Steel Steel Steel Steel Steel Steel Steel Steel		October October October October October October October October November November October	July '54 June '54 Sept. '54 FebApr. '54 July '54 July-Aug. '54 May-June '54 AugSept. '54 FebMar. '54 July-Sept. '54 SeptOct. '54 June '54	Can. Car & Fdy. Can. Car & Fdy. Can. Car & Fdy. National Steel Car National Steel Car Eastern Car Eastern Car Eastern Car Eastern Car Eastern Car Eastern Car Marine Industries, Marine Industries
Canadian Pacific	750 200 40	Box Flat Tank	100,000 140,000 16,000	40 53 48	6 2 2	Steel Steel Steel		July July July	1954 1954 1954	Ltd. Con, Car & Fdy. Can, Car & Fdy. Con, Car & Fdy.
Falconbridge Nickel Mines.	350 500 750 200 25 6	Triple Hopper Gosdola Box Refrigerator Exp. Refrig. Hart Otis Dump	(Imp. Gal.) 160,000 156,000 100,000 100,000 100,000 160,000	40 52 40 40 40 23	8 6 0 0	Steel Frame Steel Frame Steel Steel Steel Steel	49,200 53,600 44,300 62,800 74,000 48,200	September September July July July February	Feb. '54 2nd qtr. '54 1954 2nd qtr. '54 July '54 October	Eastern Car Eastern Car National Steel Car National Steel Car National Steel Car Can. Car & Fdy.
International Nickel Co. of Canada	15	Hart Otis Ore Hopper	160,000 140,000	22 35	11	Steel Frame	48,000	October July	May '54 November	Can. Car & Fdy. R. R. Shope



Motive Power Ordered in 1953

By H. C. WILCOX and FRED C. MILES

Associate Editors

Locomotive units ordered in this country last year totaled 2,068, including 143 for export. All orders were for diesel or electric units. No orders for steam locomotives to be built in the United States, either for domestic use or for export, were reported to Railway Age in 1953.

The detailed list of motive-power orders accompanying this story was compiled by Railway Age from reports submitted by railroads, private car lines, industrial firms and contract locomotive builders. As in previous Review and Outlook issues, orders for diesels reported to Railway Age in terms of complete locomotives, rather than as units, are so tabulated, as indicating how the purchaser intends to use the equipment.

At least one railroad president expressed during the year interest in formation of a national or regional pool of diesel locomotives, on which different railroads could draw to meet varying seasonal traffic peaks. An individual arrangement along that line is the seven-year contract drawn up in 1951 between the Bangor & Aroostook and the Pennsylvania, under which the PRR leases from the B&A, between early May and early November of each year, 10 B&A General Motors general purpose diesel units, at a rental computed on estimated cost of ownership. Thus, the B&A has use of these locomotives during its own heavy-traffic winter season, but does not have to

keep them idle during summer months, when the PRR uses them to meet peak traffic requirements for coal and ore shipments at Erie, Pa. The B&A, in turn, this year, leased from the New Haven, on a year-to-year basis, six diesel units, and is now trying to arrange a long-term contract with some railroad for that number of locomotives during its winter period of peak traffic.

The statistics show once again that the 12-month period ending with November 1, 1953, has seen a continuing, though slightly slower, rate both in the installation of new diesel-electric locomotive units and the retirement of obsolete steam units.

The previous 12-month period, ending with November 1, 1952, established what probably will be the peak year in the retirement of obsolete steam power, during which 5,725 steam units were taken out of service. During the same period, a total of 3,035 diesel-electric units were installed, the replacement ratio being slightly less than one to two. If the "replacement ratio" has any great significance, it may be of incidental interest that the ratio in the most recent 12-month period for which figures are available was 1 to 2.5.

The statistics of ownership do not tell the entire story of railroad motive power. The proportion of work done by the steam locomotive in all three classes of service—freight, passenger and switching—continues to decline at an accelerated rate. In road freight service,



MOTIVE POWER ORDERS in the U.S. last year were almost exclusively for diesel units.

steam locomotives now perform only 30 per cent of the locomotive mileage whereas that run by the diesels has increased to 70 per cent. That diesel-electric road power is being efficiently utilized is indicated by the fact that, on the basis of gross-ton miles, the diesel is now doing 74 per cent of the work as against 66.5 per cent a year ago. Still more impressive is the fact that in passenger service the use of steam power has further declined to such an extent that the diesel is doing 77 per cent of the work, and in switching service the proportion of all work done by the diesel is 82 per cent in freight yard switching and 80 per cent in passenger yard switching.

The 4,359 steam locomotives retired from service in the 12-month period ended November 1, 1953, reduced the ownership of that type of power to 12,247 units. It is a matter of conjecture as to what the railroads may do in the next few years with respect to the retirement of the remaining steam power and its replacement by diesels, but it seems reasonably safe to assume that the change will not proceed at its recent pace.

It is well known that the maximum economy possible with the use of diesel-electric power cannot be realized as long as facilities for servicing a declining number of steam units must be retained in a particular territory. Important, too, is the fact that practically the only steam locomotive building and repair facilities today are in the hands of the railroads, and the rapid transition of shops and terminals from steam to diesel is reducing the opportunities properly to maintain steam power regardless of its ownership. The economies of retaining a small number of steam units in service on a railroad which is mostly dieselized should certainly be carefully explored with the idea of becoming 100 per cent dieselized as rapidly as possible.

During the year just ended there has been no marked change in the motive power picture with respect to the gas turbine and electric units. Additional gas turbine units are now offering a continually broadening experience for that type of power and there are some indications that in the electric field new developments may bring electrification back into the picture.

200000000000000000000000000000000000000					
	STEAM L	ОСОМОТ	IVES		
	1942	1952	1953	1953 vs. 1942 Decrease	1953 vs. 1952 Decrease
Passenger Freight Freight or Passenger Switch	6,498 94,650 1,306 7,165	2,438 10,749 756 9,670	1,687 7,987 632 1,941	4,811 16,663 674 5,224	751 2,755 124 729
Total	39,619	16,606	19,247	27,372	4,359
DIE	SEL-ELECTI	SIC LOCO	MOTIVES		
	1949	1952	1953	1953 vs. 1949 Increase	1953 vs. 1952 Increase
Passenger Freight Freight or Passenger Switch	156 52 20 1,284	1,349 4,781 638 7,593	1,390 5,605 802 8,374	1,234 5,553 782 7,090	48 824 164 781

14,354

1.512

Locomotives	Ordered,	1935-19	953		
Year	Steam	Diesel	Electric	Total	U. S. Export
1953	0	1,923*	2	1,925	143
1959	15	1.829*	25**	1.869	187
1951	92	4,038*	1.6	4,074	362
1950	15	4.473*	284	4,516	234
1949	13	1,782*	10	1,805	115
1948	54	2,661*	9	2,717	435
1947	79	2,149	1	2,229	655
1946	55	989	8	1,052	629
1945	148	691	6	845	1,895
1944	74	680	3	757	134
1943	413	635	0	1,048	60
1942	363	894	19	1,269	32
1941	302	1,104	38	1.444	85
1940	207	492	13	712	85
1939	119	249	32	400	40
1938	36	160	29	225	24
1937	173	145	36	354	56
1936	435	77	24	536	22
1935	30	60	7	97	15

Note: U. S. Government purchases excluded for years 1942-1944 and 1952.

*Dises orders are shown in unit for 1948 through 1953, dises lorders for previous years are shown in locomotives, which may include one or more units.

** Includes 10 gas-turbine electrics.
** Includes 15 gas-turbine electrics

^{*} Data from A.A.R. Car Service Report 56-A1.



Electric, Diesel and Other Internal Combustion Locomotives Railroad Orders—For Service in the United States

Purchaser	No.	Wheel Arrange- ment	Service	Туре	Weight Lb.	Horse- power	Date of Order	Date of Delivery	Builder
Akron, Canton & Youngstown	1	В-В	Freight	Diesel-Elec.	250,000	2,000	October	March '54	Fairbanks, Morse
	1	B-B	RdSw.	Dierel-Elec.	246,000	1.600	October	March '54	Fairbanks, Morse
AlaskaAliquippa & Southern	6	B-B	Freight	Diesel-Elec.	248,000	1.500	September	December	Electro-Motive
Aliquippa & Southern	1	B-B	Switching	Diesel-Elec.	248,000	1,200	October	December	Electro-Motive
4	3	B-B	Switching	Diesel-Elec.	230,000	800	October	December	Electro-Motive
Apalachicola Northern	2	B-B	Freight	Diesel-Elec.	248,000	1.200	January	November	Electro-Motive
tchison, Topeka & Santa Fe	15	B-B	RdSw.	Diesel-Elec.	248,000	1.500	May	June	Electro-Motive
and the second s	15	B-B	RdSw.	Diesel-Elec.	248,000	1.500	September	October	Electro-Motive
	48	B-B	Freight	Diesel-Elec.	248,000	1.500	September	October	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	248,000	1,200	September	November	Electro-Motive
	15	B-B	RdSw.	Diesel-Elec.	248,000	1,500	September	November	
Saltimore & Ohio	8*	AIA-AIA	Passenger	Diesel-Elec.	329,000	2,250	July		Electro-Motive
artimore of Como	12*	B-B						October	Electro-Motive
	7*		RdSw.	Diesel-Elec.	247,500	1,500	July	SeptOct.	Electro-Motive
		B-B	RdSw.	Diesel-Elec.	258,000	1,500	July	October	Electro-Motive
	4*	C-C	RdSw.	Diesel-Elec.	370,000	1,500	July	November	Electro-Motive
	1.0	C-C	RdSw.	Diesel-Elec.	372,800	1,500	June	August	Electro-Motive
	1*	B-B	RdSw.	Diese I-Elec.	246,100	1,600	July	Feb. 54	Baldwin-Lima-Hamilto
	8*	B-B	Switching	Diesel-Elec.	230,000	1,000	July	December	American
	6	B-B	Switching	Diesel-Elec.	246,500	1,200	November	December	Electro-Motive
	5*	B-B	Switching	Diesel-Elec.	240,000	1,200	July	November	Baldwin-Lima-Hamilton
	2*	B-B	Switching	Diesel-Elec.	246,000	1,200	July	September	Fairbanks, Morse
ellefonte Central	1	B-B	Switching	Diesel-Elec.	248,000	1,200	May	July	Electro-Motive
irmingham & Southeastern	1	B-B	Switching	Diesel-Elec.	88,000	400	April	May	General Electric
rmingham Southern	1	B-B -	Freight	Diesel-Elec.	360,000	1.600	September	December	American
	1	B-B	Switching	Diesel-Elec.	88,000	400	April	May	G. ECater.
oston & Maine	6	B-B	RdSw.	Diesel-Elec.	240,000	1,500	January	May	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	248,000	1,200	January	May	Electro-Motive
	8	B-B	Switching	Diesel-Elec.	230,000	800	January	June	Electro-Motive
	14	B-B	Switching	Diesel-Elec.	198,000	600	January	August	Electro-Motive
	6	B-B	Switching	Diesel-Elec.	248,000	800	May	May '54	American
	5	B-B	RdSw.	Diesel-Elec.	248,000	1.600	May	May '54	American
atte, Anaconda & Pacific	1	B-B	RdSw.	Diesel-Elec.	248,000	1,500	March		
amino, Placerville & Lake Tahoe	3	B-B	Switching	Diesel-Elec.	88,000	400	March	June	Electro-Motive
impbell's Creek	1	B-B	Switching	Diesel-Elec.				June	G. ECater.
mipuen e Creek	1	B-B			248,000	1,200	January	April	Electro-Motive
anton	0	B-B	Switching	Diesel-Elec.	244,980	800	June	September	Electro-Motive
4-5 D - 11 6 F - CV	2		Switching	Diesel-Elec.	244,980	800	December	Jan. '54	Electro-Motive
dar Rapids & Iowa City	3	B-B	Switching	Diesel-Elec.	230,000	800	August	October	Electro-Motive
entral of Georgia	1	C-C	Switching	Diesel-Elec.	330,000	1,500	February	May	Electro-Motive
1 6 011	4	В-В	Switching	Diesel-Elec.	248,000	1,200	February	February	Electro-Motive
esapeake & Ohio	4	A1A-A1A	Passenger	Diesel-Elec.	316,500	2,250	January	May	Electro-Motive
	45	B-B	RdSw.	Diesel-Elec.	258,000	1,500	January	March	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	246,000	1,200	November	December	Electro-Motive
	14	B-B	Switching	Diesel-Elec.	245,000	1,000	Januar y	July	American
	2	B-B	RdSw.	Diesel-Elec.	248,000	1,000	January	September	American
	2	C-C	RdSw.	Diesel-Elec.	325,000	1.600	January	July	Baldwin-Lima-Hamilton
icago & North Western	11	AIA-AIA	Passenger	Diese-Elec.	316,500	2,250	February	May	Electro-Motive
	12	B-B	Switching	Diesel-Elec.	198,000	600	February	May	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	248,000	1,200	February	June	Electro-Motive
	35	B-B	Rd,-Sw.	Diesel-Elec.	248,000	1,500	February	April-May	Electro-Motive
	5	C-C	RdSw.	Diesel-Elec.	330,000	1,500	February	May-June	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	240,000	1.200	January	June	Baldwin-Lima-Hamilton
	6	C-C	RdSw.	Diesel-Elec.	287,000	1,600	February		
	3	B-B	Switching	Diesel-Elec.	246,000	1,300	February	July	Fairbanks, Morse
	4	B-B	RdSw.	Diesel-Elec.	244,000	1,000		August 1953	Fairbanks, Morse
	7	B-B	RdSw.	Diesel-Elec.		1,600	February		American
							February	1953	American

Purchaser	No.	Wheel Arrange- ment	Service	Туре	Weight Lb.	Horse- power	Date of Order	Date of Delivery	Builder
Chicago, Burlington & Quincy	8 25 15 20	A1A-A1A C-C B-B C-C	Passenger RdSw. Rd-Sw. RdSw.	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	332,345 321,590 250,100 321,590	2,250 1,500 1,500 1,750	March March September September	September October December May '54	Electro-Motive Electro-Motive Electro-Motive Electro-Motive
Chicago, Milwaukee, St. Paul & Pacific	9 6 6 5 5 1 4 4 8 6 5 8 8 5 1 2 6 5	B-B B-B B-C C-C B-B C-C B-B B-B B-B B-B	Freight Freight Switching Rd. 8w. Rd. 8w. Rd. 8w. Rd. 8w. Rd. 8w. Switching Rd. 8w. Rd. 8w. Rd. 8w. Switching Rd. 8w. Switching Rd. 8w. Switching Rd. 8w. Switching Rd. 8w.	Dissel-Elec,	248,000 248,000 248,000 330,000 330,000 3248,000 325,000 240,000 246,000 246,000 246,000 240,000 240,000 241,000 241,000	1,500 1,750 1,200 1,500 1,750 1,750 1,500 1,600 1,200 1,600 1,600 1,600 1,500 1,200 1,200 1,200	February October October February October February February August January September 1953 March July September September September September September September September September September	April Jan. '54 Jan. '54 October Jan. '54 October Jan. '54 October Jan. '54 October Jan. '54 Jan. '54 Jan. '54 May July October November	Electro-Motive Electro-Motive Electro-Motive Electro-Motive Electro-Motive Electro-Motive Electro-Motive Electro-Motive Baldwin-Lima-Hamilton Baldwin-Lima-Hamilton Fairbanks, Morse Fairbanks, Morse Fairbanks, Morse American American Electro-Motive Electro-Motive
Chicago, St. Paul, Minneapolis & Omaha	3 5 1	B-B C-C B-B	Switching RdSw. RdSw.	Diesel-Elec. Diesel-Elec.	223,000 287,000	1,600 1,000	September February February	November July 1953	Fairbanks, Morse American
Davenport, Rock Island & North Western Delaware & Hudson Detroit, Toledo & Ironton Duluth, South Shore & Atlantic Durham & Southern Ferdinand Ft. Dodge, Des Moines & Southern Fort Worth & Denver Georgis Great Northern	3 10 10 2 1 3 1 2 2 3 2 2 6 8	B-B B-B B-B B-B C-C B-B B-B C-C B-B B-B	RdSw. Switching RdSw. RdSw. RdSw. Gen. Pur pose Freight Switching Freight Hoad Road Road Road Road	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	248,100 254,000 254,000 325,000 240,000 170,000 170,000 233,000 233,000 248,000	1,600 660 1,600 1,500 1,500 1,200 300 1,500 1,500 1,500 1,500 1,750 1,500	February 1953 February September March August November February October June September February December January	1953 August November April August March '54 February 1953-'54 October November May Feb. '54 January	American American Electro-Motive Electro-Motive Baldwin-Lima-Hamilton Baldwin-Lima-Hamilton G. ECuoper-Bess. Electro-Motive Electro-Motive Electro-Motive Electro-Motive Electro-Motive Electro-Motive
	6 8 25 3 8 5	B-B B-B B-B C-C B-B	Freight Freight Rd-Sw. RdSw. RdSw. Switching	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	248,000 248,000 248,000 248,000 330,000	1,750 1,500 1,750 1,500 1,500 1,200	December January December January January January	Feb. '54 January March '54 March March 1953	Electro-Motive Electro-Motive Electro-Motive Electro-Motive Electro-Motive Baldwin-Lima-Hamilton
Illinois Terminal. Indiana Harbor Belt. International-Great Northern. Interstate. Los Angeles Junction. Louisville & Nashville.	5 2 7 9 8 1 42 42 42	B-B B-B B-B B-B B-B B-B B-B	RdSw. Freight Switching RdSw. RwSw. Switching RdSw. Freight	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	244,000 246,000 248,000 248,000 230,000 240,000 240,000	1,600 1,500 1,200 1,500 1,600 1,600 1,600 1,600	January June August November August March November November November	1953 September October March '54 November September 1953-'54 1953-'54 Jan. '54	American Electro-Motive Electro-Motive Electro-Motive American American American American American American
Maine Central McCloud River Minnespolis, Northfield & Southern Mississippi Export Missouri-Hinoss Missouri Pacific Missouri Pacific	4 1 2 2 1 1 2 24	B-B B-B B-B B-B C-C B-B B-B	RdSw. RdSw. Switching RdSw. Switching Road Freight RdSw. RdSw.	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	240,000 248,000 248,000 248,000 354,000 137,600 244,400 248,000	1,750 1,500 1,200 1,600 1,200 2,400 600 1,600 1,500	November October November November April January February November November	Mar. '54 NovDec. December November September July February March '54 March	Electro-Motive Electro-Motive Electro-Motive American Baldwin-Lima-Hamilton G.ECooper-Bess. American Electro-Mutive
Monesien Southwestern Monongabela New York Central	24 1 12 34 80	B-B B-B A1A-A1A B-B	Freight Switching Switching Passenger RdSw.	Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec.	240,120 248,000 240,000 334,000 248,000	1,600 1,200 1,200 2,250 1,500	November July January April April	JanMar.'54 September 1953 September June	Electro-Motive Baldwin-Lima-Hamilton Electro-Motive Electro-Motive
New York, Chicago & St. Louis Norfolk Southern Northern Pacific	10 25 3 5 4 10 1	B-B B-B B-B B-B B-B 3(B-B)	Rd-Sw. Gen. Purpose RdSw. Gen. Purpose Switching RdSw. RdSw. Passenger	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	248,000 235,800 236,400 290,000 230,000 248,000 250,000 750,000 984,000	1,600 1,600 1,500 1,600 1,000 1,600 1,500 5,250 7,000	April May May October September September September	October November July-Aug. Feb. '54 December December December Feb. '54	American Baldwin-Lima-Hamilton Hictro-Motive Buldwin-Lima-Hamilton American American Electro-Motive Electro-Motive
Northern Pacific Terminal North Louisiana & Gulf Pennsylvania	1 43 2 11 5 11 2	B-B B-B C-C B-B B-B B-B	Freight Switching Switching RdSw. Switching Switching Switching Switching Switching Switching Switching Switching Switching	Diesel-Elec.	230,000 230,000 140,000 248,600 234,100 228,000 231,000 259,000	1,000 800 600 1,500 1,500 1,600 1,000 1,200 1,600 2,400	September December November September June June June June June June June June	Jan. '54 April '54 December 1954 November November December Feb. '54 Feb. '54 Feb. '54 Feb. '54	Electro-Motive American Electro-Motive G. ECooper-Bess. Electro-Motive Flectro-Motive American American American Baldwin-Lima-Hamilton Baldwin-Lima-Hamilton
Pennsylvania-Reading Sesshore Lines	1 6	B-B 2(B-B)	Switching Freight Passenger	Diesel-Elec. Electric Diesel-Elec.	248,000 480,000 265,000 237,400	1,200 5,000 1,600	June March January	Feb. '54 March April	Fairbanks, Morse General Electric Baldwin-Lima-Hamilton
Piedmont & Northern	5 6 9 5 35	B-B B-B	Switching Switching Switching RdSw. Switching	Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec.	237,400 240,000 248,000 246,000 231,000	1,200 1,000 1,200 1,600 600	May November September April April	1953 March '54 October October November	Baldwin-Lima-Hamilton American Flectro-Motive American American
Pittaburgh, Chartiers & YoughloghenyRahway ValleyReading	1 16 12 2** 2 5 3 7	B-B B-B B-B C-C C-C C-C B-B B-B	Switching RdSw. RdSw. RdSw. RdSw. RdSw. RdSw. RdSw. RdSw. RdSw. RdSw.	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	238,100 140,000 246,400 248,100 386,700 385,900 385,900 247,300 259,700 261,600	1,200 600 1,500 1,500 2,400 2,400 2,400 1,600 1,600	July August March July April April July April July April	September 1954 May October October OctNov. August OctNov.	Electro-Motive G. ECooper-Bess. Electro-Motive Electro-Motive Fairbanks, Morse Fairbanks, Morse Fairbanks, Morse American American Baldwin-Lima-Hamilton
Richmond, Fredericksburg & Potomac	4 2 1 3 6	B-B B-B B-B	Passenger Freight Freight RdSw. Gen. Purpose	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	222,567 252,384 230,000 248,000 248,000	2,250 1,500 800 1,500 1,600	February February May November December	October June September March '54 1954	Electro-Motive Electro-Motive Electro-Motive Electro-Motive Baldwin-Lima-Hamilton



Purchaser	No.	Wheel Arrange- ment	Service	Туре	Weight Lb.	Horse- power	Date of Order	Date of Delivery	Builder
St. Louis-San Francisco	5	В-В	Freight	Diesel-Elec.	248,000	1,500	March	June	Electro-Motive
0 1 11	5	B-B	Freight	Dienel-Elec.	232,000	1,750	October	Jan. '54	Electro-Motive
Sandersville	1	B-B	Switching	Diesel-Elec.	246,000	1,200	August	August	Fairbanks, Mores
Southern	10	A1A-A1A		Diesel-Elec.	316,500	2,250	September	December	Electro-Motive
C .1 Th 10	6	A1A-A1A	Passenger	Diesel-Elec.	283,300	2,250	September	NovDec.	American
Southern Pacific	3	4(B-B)	Freight	Diesel-Elec.	1,004,850	6,000	February	February	Electro-Motive
	8	3(B-B)	Freight	Diesel-Elec.	775,590	4,500	February	1st qtr. 54	Electro-Motive
	6	3(B-B)	Freight	Diesel-Elec.	742,050	4,500	March	1953	Electro-Motive
	3	2(B-B)	Freight	Diesel-Elec.	496,440	3,000	March	May	Electro-Motive
	15	2(C-C)	Freight	Diegel-Ele c.	326,750	3,200	March	September	American
	27	C-C	Freight	Diesel-Elec,	326,750	1,600	March	SeptOct.	American
	3	B-B	Freight	Diesel-Elec.	040,000	1,500	March	1953	Electro-Motive
	9	B-B	Freight		248,750	1,200	March	September	Baldwin-Lima-Hamilton
	10	B-B	Switching	Diesel-Elec.	248,750	1,200	March	Sept. Oct.	Baldwin-Lima-Hamilto
	10	B-B	Switching	Diesel-Elec.	249,000	1,200	March	May-Aug.	Fairbanks, Morse
	10	D-D	Freight	Diesel-Elec.	221,060	800	March	June-July	Electro-Motive
	46	(ALA-ALA	Passenger	Dienel-Elec.	954,450	6,750	March	SeptOct.	American
	1	B-B	Freight	Diesel-Elec.	100,000	400	0-1-1-	1 10.4	CT C.
	2	C-C	Freight	Diesel-Elec.	380,300	2,400	October	June '54	G.ECater.
	2	C-C	Freight	Diesel-Elec.	375,000	2,400	November	November	Fairbanks, Morse
	6	C-C	Freight	Diesel-Elec.	375,000	2,400	November November	December Feb. '54	Fairbanks, Morse
	6	В-В	Freight	Diesel-Elec.	248,000	1,200	November	Feb. '54	Fairbanks, Morse
	32	C-C	Freight	Diesel-Liec.	330,000	1,750	November	Ave Man 's	Electro-Motive 4 Electro-Motive
	32 25	B-B	Freight	Diesel-Elec.	248,000	1,750	November	Mid. '54	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	230,000	800	December	Jan. '54	Electro-Motive
Spokane International	3	В-В	Freight	Diesel-Elec.	240,000	1,000	January	July-Aug.	American
Alabama State Docks	1	B-B	Switching	Diesel-Elec.	130,000	1.000	July	Jan. '54	American
Tidewater Southern	î	B-B	Freight	Diesel-Elec,	140,000	600	May	July	GECooper-Bess.
Trona	î	C-C	Freight	Diesel-Elec.	360,000	1,600	September	April, '54	Baldwin-Lima-Hamilton
Union Pacific	9	ALA-ALA	Passenger	Dienel-Elec.	111111	2,400	February	April	Electro-Motive
	10	C-C	RdSw.	Diesel-Elec.		1,500	March	June	Electro-Motive
	10	В-В	RdSw.	Diesel-Elec.		1,500	May	August	Electro-Motive
	10	В-В	RdSw.	Diesel-Elec.	*****	1,500	July	October	Electro-Motive
	20	B-B	Switching	Diesel-Elec.		1.200	August	November	Electro-Motive
	190	B-B	RdSw.	Diesel-Elec.	*****	1,750	October	1st half '54	Electro-Motive
	5	3(A1A-A1A)		Diesel-Elec.		7,200	October	2nd qtr. '54	Electro-Motive
Valley & Siletz	2	В-В	RdSw.	Diesel-Elec.	140,000	600	November	1954	G. ECooper-Bess.
Virginian	19	C-C	Gen. Purpose	Diesel-Ele c.	394,000	2,400	December	1954	Fairbanks, Morse
	6	B-B	RdSw.	Diebel-Elec.	260,000	1,600	December	May '54	Fairbanks, Morse
Wabash	6	B-B	RdSw.	Diesel-Elec.	*****	1,750	August	Jan. '54	Electro-Motive
	4	В-В	Switching	Diesel-Elec.		1,200	August	Jan. '54	Electro-Motive
Western Maryland	5 2	B-B	Freight	Diesel-Elec.	248,000	1,500	September	December	Electro-Motive
	2	В-В	Switching	Diesel-Elec.	248,000	1,600	September	December	American
Western of Alabama	2	В-В	Road	Dienel-Elec.	233,000	1,500	February	May	Electro-Mative
Western Pacific	4	B-B	RdSw.	Diesel-Elec.	246,000	1,500	March	April	Electro-Motive
Wichita Falls & Southern	2	B-B	Switching	Diesel-Elec.	230,000	800	July	August	Electro-Motive
Winfield	1	B-B	Switching	Dienel-Elec.	90,000	300	July	July	G. ECummins
Wisconsin Central	6	В-В	Freight	Dienel-Elec.	248,000	1,500	May		Electro-Motive
		B-B	Switching	Diesel-Elec.	248,000	1,200	May	September	Electro-Motive

^{*}Leased from the Equitable Life Assurance Society. **Equipped with boiler for passenger-train operation.

Other Orders-For Service in the United States

Purchaser	No.	Wheel Arrange- ment	Service	Туре	Weight Lb.	Horse- power	Date of Order	Date of Delivery	Builder
Alger Sullivan Lumber Co	1 1 1	B B-B B-B	Switching Switching Switching Switching	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	50,000 160,000 70,000 130,000	150 550 300 550	May July August February	May November December November	G. ECummins G. ECummins G. ECummins G. ECummins
Cement Co. Beothel Corp Beth. Pac. &g. Bethiehem Steel Co. Blackfoot Coal & Land Corp. Carolina Light & Power Co. Central Iron & Steel Co. Central Texas Gravel Co. Cleveland Quarries Co.	1 1 2 3 1 2 1 1	B-B B-B B-B B-B B-B	Switching Switching Switching Switching Switching Switching Switching Switching	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, D-Hyd. Diesel-Elec, Diesel-Elec, Diesel-Elec,	130,000 90,000 50,000 160,000 70,000 50,000 160,000 50,000 198,000	550 300 150 550 275 165 550 150	March March March February March June FebMay March October	June June May December October December May-June April November	G. ECummins G. ECummins G. ECummins G. ECummins G. ECummins Beldwin-Lime-Hamilton G. ECummins Liccton-Motive

Purchaser	No	Wheel Arrang & ment	Fervice	Туре	Weight Lb.	Horse-	Date of Order	Date of Delivery	Builder
Colorado Fuel & Iron Corp. Wickwire Spenore Stest Livision Columbia Iron & Metol Co Copperwid Steel Co H. B. Hestober Co Hrut Growers Express Co	1 1 1	B-B B-B B-B B-B B-B	Switching Switching Switching Switching Switching Switching	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	190,000 230,000 100,000 160,000 160,000 90,000	660 800 300 550 550 300	February August June December March February	March September July '54 December June April	G. ECooper-Bess. Esectro-Motive Baldwin-Linns-Hamilton G. ECummins G. ECummins G. ECummins
General Motors Carp. Buick Motor Division. Georgia State Port Authority. Gifford Hill. Great Lakes Steel Corp. Hanna Farnace Corp. Hanna Farnace Corp. Jones & Laughlin Steel Corp. Kirby Lumber Corp. Koppera Co. Kommon Timber Co. Landis Tool Co. Landis Portland Cement Co. Long Bell Lumber Corp. Long Bell Lumber Co. W. H. Mason Lumber Co. Mol.outh Steel Corp. Merohants Despetch Transporta-	222111111111111111111111111111111111111	B-B B-B B-B B-B B-B B-B B-B B-B B-B B-B	Switching RdSw., Switching Switching Switching Switching Switching Switching Switching Switching Switching Switching Switching Switching Switching Switching Switching Switching	Diracl-Elec, Desci-Elec, D-Hyd, Diracl-Elec, Diracl-Elec, Diracl-Elec, Diracl-Elec, D-Hyd, Diracl-Elec, Diracl-Elec,	230,000 140,000 130,000 198,000 198,000 199,000 248,000 50,000 50,000 90,000 90,000 90,000 90,000 198,000 198,000 198,000 198,000	900 600 550 600 660 150 1,200 150 1,200 150 600 275 159 900 600	December April OctNov. August February March August March October May April May August November October October October	Jan. '54 April December September May MarApril 1954 May 1954 December May May December Feb. '54 Dec. '54 Jan. '54 March '54	Electro-Motive G. ECooper-Bess. G. ECummins Electro-Motive Helectro-Motive G. ECooper-Bess. G. ECummins Electro-Motive G. ECummins Electro-Motive G. ECummins Electro-Motive G. ECummins Electro-Motive G. ECummins Baldwin-Lima-Hamilton Electro-Motive Electro-Motive Electro-Motive Electro-Motive Electro-Motive
tion Corp. National Tube Co. J. Neill Lumber Co. Newport News Shipbuilding &	1 1	B-B B-B B-B	Switching Switching Switching	Diesel-Elec. Diesel-Elec. Diesel-Elec.	230,000 130,000 90,000	800 550 300	January January February	March May February	Electro-Motive G. ECummins G. ECummins
Newport News Shipbuilding & Dry Block Co. Ningara Mohawk Power Co. Ningara Mohawk Power Co. Northern Indiana Public Service Co. Oliver Iron Mining Co. Pacific & Arctic Navigation Co. Phelps Dodge Corp. Port of Corpus Christi, Pullman-Standard Cur Mfg. Co. Reserve Mining Co. Schara Cosl. South Steel Co. Southwest Construction Co. Standard Siag Co. Tennessee Valley Authority Tol-do Edison. U. S. Steel Corp.:	211113233111111111111111111111111111111	B-B B-B 2B-B 2B-B C-C B-B B-B B-B B-B B-B B-B B-B	Switching Switching Switching Transfer Switching RdSw. RdSw. Switching Switching Switching Switching Switching Switching Switching Switching Switching Switching Switching	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	100,000 160,000 198,000 460,000 248,000 50,000 50,000 198,000 198,000 50,000 50,000 196,000 160,000 160,000 130,000	270 550 600 1,600 1,206 800 1,500 150 300 600 600 150 300 550 550	October July November June June June February January November November February July October May March November May March November May	June '54 November March '54 August 1934 May-June November June September November July April-June December November November	Baldwin-Lima-Hamilton G. ECummins Electro-Motive Electro-Motive Electro-Motive General Electric Electro-Motive G. ECummins G. ECummins Electro-Motive Electro-Motive Electro-Motive G. ECummins G. ECummins G. ECummins G. ECummins G. ECummins G. ECummins
Columbia Geneva Steel Division. Columbia Geneva Steel Division. U. S. Transportation Corps. Virginia Electric Co. Wallace Stone. Warner Sand & Gravel Co. Weigrton Steel Co. Weyerheuser Timber Co. Wheeling Steel Cop. J. R. Williams & Co. Willputte for Semet-Solvay Co. Yankeetown Dock Corp.	12621121111	B-B B-B B B-B B-B B-B B-B B-B	Switching Switching Switching Switching Switching Switching Switching Switching Switching Switching Switching	Diesel-Elec Diosel-Elec Diosel-Elec Diesel-Elec Diesel-Elec Diesel-Elec Diesel-Elec Diesel-Elec Diesel-Elec Diesel-Elec Diesel-Elec Diesel-Elec Diesel-Elec	198,500 240,000 96,000 50,000 50,000 198,000 248,000 248,000 50,000 50,000 246,000	800 1,200 450 150 150 600 300 1,200 1,200 150 1,200	February June March October September April March October 1953 May December November	July November Feb. '54 December October May June December 1953 May 1954 Sept. '54	Baldwin-Lima-Hamilton Baldwin-Lima-Hamilton Baldwin-Lima-Hamilton G. ECummins G. ECummins Electro-Motive G. ECummins Electro-Motive G. ECummins G. ECummins Fairbanks, Morse
For Export		Wheel							
Purchaser	No.	Arrenge- ment	Service	Туре	Weight Lb.	Horne- power	Order	Date of Delivery	Builder
Belgium Bhekra Dam (India) Canadion Arsensi Chile Steel Mill. Else, Met. Can. (Canada)	1 1 1 1 2 1	B-B B B-B B-B B-B	Switching Switching Switching Switching Switching Switching Switching	Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec.	90,000 70,000 88,000 50,000 90,000 170,000 160,000	300 275 400 150 300 1,100 550	April April January January Docember March March	December November July February December 1954 April	G. ECummins G. ECummins G. ECummins G. ECummins G. ECummins G. ECummins
Ferrocarril del Pacifico (Mexico). Gillies Bros. (Canada)	13 1 1 1 1 20 20	B-B B B-B B-B C-C B-B	RdSw. Switching Switching Switching Switching Switching Gen. Purpose	Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec.	50,000 50,000 90,000 130,000 160,000 325,000	1,600 150 150 300 550 550 1,600	1953 December April May February June September	1954 May May May September July '54	American G. ECummins G. ECummins G. ECummins G. ECummins G. ECummins Baldwin-Lima-Hamilton
New Brunswick Int. Paper (Canada) Panoma-Maritrop Trading Sorocabana By. (Brazil) South Africa. Taiwan (Formeau)	1 2 21 3 2	B-B B-B B-B B-B B-B	Freight Switching Switching Road Switching Switching Switching	Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec.	248,000 70,000 100,000 220,000 90,000 130,000 90,000	1,750 275 450 1,600 300 550 300	December April August June August February November	FebNov.'54 April 1954 1954 1954 June 1954	Blectro-Motive) G. ECummins G. ECater. General Electric G. ECummins G. ECummins G. ECummins
Tata Iron (India) Trinidad (B. W. I.) Uninor France Uruguay State Rys.	2 1 27 7 4	B-B B-B B-B B-B B-B	Switching Switching Switching RdSw. Switching Switching	Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec. Diesel-Elec.	70,000 88,000 88,000 212,000 88,000 50,000	275 400 300 1,400 400 150	February October 1953 July July July	1954 December 1954 1954 1954	G. ECummins General Electric General Electric General Electric General Electric
Unines Gustave Boel (Belgium)	4	В	Switching	Diesel-Elec.	70,000	240	1953	1953-'54	Baldwin-Lima-Hamilton
Canada		Wheel							
Purchaser	No.	Arrange- ment	Service	Туре	Weight Lb.	Horse- power	Date of Order	Date of Delivery	Builder
Canadian National	18 24	B-B B-B	RdSw. RdSw.	Diesel-Elec.		1,600 1,500	June June	NovDec. AugDec.	Montreal Locomotive G. M. Diesel, Ltd.
Causadian Pacific. Dominion Foundries & Steel, Ltd., Outario Northland. Pacific Great Eastern. Steel Co. of Canada. Toronto, Hamilton & Buffalo	8 5 5 1 8 3 4 3 3	A1A-A1A B-B B-B B-B B-B B-B B-B B-B	RdSw. Freight Freight Switching Road RdSw. Switching Gen. Purpose Passenger	Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec, Diesel-Elec,	263,000 262,200 230,000 258,000 238,200 230,000 240,000 250,000	1,200 1,500 1,600 800 1,500 1,600 800 1,500 1,750	June March March November April April March January December	June June December November AugOct. AugSept. April-May June-July Feb. '54	Canadian Locomotive G. M. Diesel, Ltd. Montreal Locomotive G. M. Diesel, Ltd. G. M. Diesel, Ltd. Montreal Locomotive G. M. Diesel, Ltd. G. M. Diesel, Ltd. G. M. Diesel, Ltd.

What's Ahead for Cuba's Roads?

By ROBERT G. LEWIS

Associate Editor

A review of the operation of the railroads in Cuba for the year just ended presents a relatively gloomy picture. Both major systems in the island wound up with deficits—one for the first time in more than a decade. The current year is not likely to be too much different, but the long range outlook is favorable. Removal of barriers that are primarily artificial could, in fact, enable the Cuban lines to prosper.

The fortunes of the Cuban roads, and, indeed, of the nation itself, are tied closely to the world demand for sugar. Some freight rates are adjusted to conform to sugar prices, so the effect on railroad revenues is very severe when demand is low. Sugar and its products normally make up about 80 per cent of all tonnage and about 55 per cent of all revenues.

The recent decline in business, related to reduced sugar production and sales, adversely affected other freight traffic, and passenger traffic as well. Increased encroachment by virtually unregulated highway competitors, making a strong bid for a declining total volume of available business, further affected traffic and revenues of the railroads.

Cuba's common carrier railroads are comprised of two principal systems. The western half of the island is served by the 1,315-mile Ferrocarrilles Occidentales, the former British-owned United of Havana. The eastern half is served by the 1,176-mile Consolidated of Cuba, a Cuban-operated system made up of the Cuba, the Cuba Northern, and the Guantanamo & Western. There is in addition the Hershey Railroad, and many smaller lines, a few common carriers and many private, owned by the sugar interests which are their primary users.

Exit: United of Havana

On December 1, 1953, the former United of Havana was taken over by the Cuban government, which had operated it since March, 1949, and renamed the Ferrocarriles Occidentales de Cuba, or Western Railroads of Cuba. Purchase was consummated for \$13 million. A \$20 million bond issue is planned to cover the purchase and provide \$7 million for urgently needed rehabilitation. Dieselization, upgrading of the track, and new freight cars are requisites of the first order.

The Consolidated Railroads of Cuba, on the other hand, has applied a large amount of its earnings to a progressive, well-conceived improvement program providing dieselization, heavier rail, better port facilities, mechanization of track work, and replacement of obsolescent freight and passenger rolling stock. Funded debt has been reduced \$21 million since 1941. Given a fair



MODERN RAIL DIESEL cars have helped trim passenger operating costs and proved popular with passengers on local runs in Cuba. Sixteen Budd RDC cars are in operation on the Consolidated.

TRAFFIC AND REVENUES FOR THE CONSOLIDATED RAILROADS OF CUBA

	Year Ended	Year Ended
	June 30, '53	June 30, '52
Freight revenue	\$12,148,777	\$15,884,934
Passenger service revenue	4,930,293	6,425,435
Total railway operating revenue	22,866,422	27,416,542
Total railway operating expense	24,144,382	23,265,342
Operating ratio	105.6%	84.9%
Net income	D2,505,382	2,329,518
Tons carried, revenue freight	9,050,205	11,767,826
Ton-miles, revenue freight	380,638,871	436,373,782
Passengers carried	5,730,182	7,155,726
Passenger-miles	144,648,582	194,543,481

competitive deal, the Consolidated stands to prosper under any favorable general economy.

Diversification of traffic is slowly being achieved with new production of iron, manganese and chrome ore assuming importance. Mineral tonnage totaled 784,498 in the year ending June 30, 1953, compared with 490,683 the previous year. Paper could become an important commodity if plans materialize for its manufacture from bagasse, the residue of cane after extraction of the sugar. If this should transpire, then fuel oil would move by rail from seaports to sugar and paper mills to provide power. Mills now burn the bagasse for fuel.

The Cuban people are becoming increasingly aware of the inequity of their "free highway" system for trucks, and constructive action is looked for. Truckers have not been required to comply with social security laws, while railroads have contributed to a federal retirement fund, grant 30-day paid vacations, sick days, and other benefits which, together, increase operating expenses very substantially. It was decreed that effective December 13, 1953, truckers must meet these same requirements. This will have an important effect on trucking costs and rates. Freedom from taxation is so complete for truckers that they are exempt even from gasoline taxes-which ordinary motorists must pay-so that they contribute nothing towards construction or maintenance of the highways, a situation which, by pressure of public opinion, may also be headed for early correction.



THE NEW SHERRIDON-LYNN LAKE LINE of the Canadian National, completed late in 1953, has opened up new sources of copper and nickel over 400 miles north

of Winnipeg. Built through country like this, the new line involved such major engineering feats as a 201-ft. bridge across the Churchill river (center foreground).

DISAPPOINTED IN '53 . . .

Canadian Roads Look Ahead

Sharply higher costs and lower traffic produce inadequate net, even at higher rates—Physical improvement continues in face of uncertainty as to future rates, costs and competition

By OUR OTTAWA CORRESPONDENT

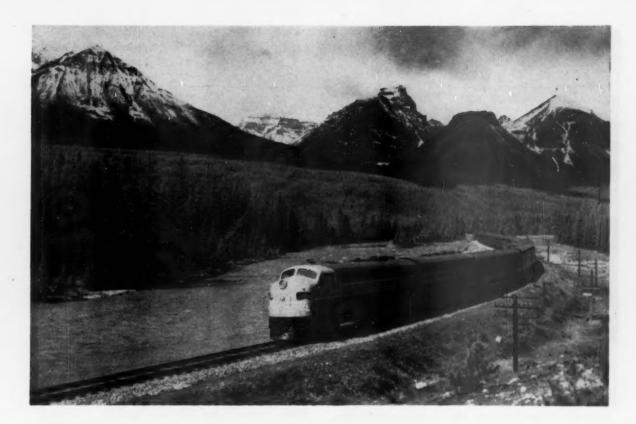
Disappointment over 1953 financial results, and over "growing impairment of the railway industry's financial position" despite its "increasingly important role" in Canada's "expanding economy" again occupied, for the second successive year, first place in year-end statements by the heads of both of the Dominion's major railroad systems. But while moderately declining traffic and sharply rising expenses combined to produce lower net income for both the Canadian National and the Canadian Pacific, both companies indicated their determination to continue to develop their properties so as "to provide Canadians . . . with new and improved services."

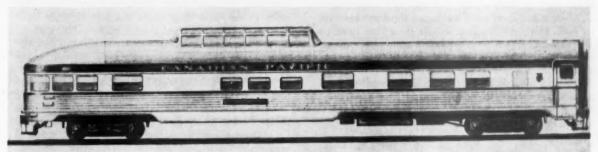
Up to the middle of December, total cars loaded in Canada plus cars received from connecting lines, were down about 4.5 per cent as compared with the comparable period of 1952—5,395,321 cars against 5,648,092.

The traffic decline, according to Donald Gordon, chairman and president of the CNR, was particularly noticeable in pulpwood, coal, crude oil, agricultural implements, fuel wood, grain, flour and l.c.l. shipments. Passenger traffic, too, declined.

The smaller volume of traffic was handled generally at rates higher than those in effect in earlier years, because of rate increases of seven per cent and nine per cent authorized early in 1953 by the Board of Transport Commissioners. But it was also handled at sharply increased operating cost, principally because of wage increases for railroad employees, which cost the CNR alone \$36 million during the year. Demands for further wage increases or expanded "fringe benefits" were pending at the year's end; one such case, involving some 150,000 non-operating employees, is expected to go before a government Conciliation Board early in 1954.

The combined effect of diminished traffic and higher





CANADA'S FIRST DOME CARS will shortly be included as standard equipment on Canadian Pacific transcon-

tinental trains. Thirty-six such cars were included among 173 cars ordered from the Budd Company last year.

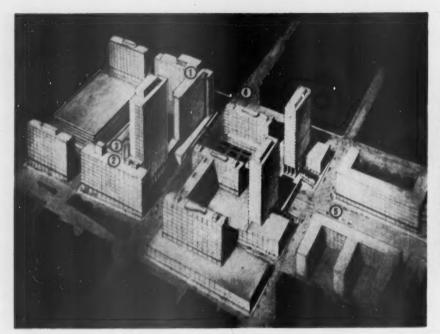
costs is pointed up by the Canadian National's report for November, when operating revenues were \$52,906,000 and operating expenses \$51,557,000, compared with \$55,061,000 and \$49,969,000, respectively, in November 1952. As a result, and in spite of higher rates, net revenue for the month was down \$3,743,000 from that reported for the comparable month a year earlier; cumulative net for 11 months was off \$11,254,000.

"The serious overall decline in the physical volume of tonnage moved, despite the fact that the nation's business activity and industrial development were at record rates, raises," again according to Mr. Gordon, "some disturbing questions which call for careful analysis."

"Most significant among these," he said, "is the diminishing traffic volume against a background of steadily increasing costs of operation and intensified competition from other transportation agencies. Such competition is encouraged by the growing discontent of shippers with rising railway freight rates which cause them to search for every opportunity to reduce their shipping costs. Under such circumstances, the diversion from the railways of high-rated traffic is seriously undermining their ability to carry bulk traffic at marginal rates."

W. A. Mather, president of the Canadian Pacific, reported that his company's net rail earnings for 1953 would be at "the unsatisfactorily low level of less than three per cent on investment in the rail enterprise"; and attributed this to "wage increases implemented during the year, growing truck competition in respect of high value freight traffic, and a decline in the volume of traffic." "General freight rate increases," he added, "have failed to provide the anticipated level of net earnings."

"This adverse trend in net earnings," Mr. Mather also said, "reflects the serious implications for rail transport



OVERALL PLAN for development of the CNR's Central Station area in Montreal includes: (1) A new hotel on the southeast corner of Dorchester and Mansfield streets; (2) an "International Aviation building," flanking a proposed 28-story railway office building; and (3) Central Station. Numeral 4 shows Dorchester street, looking west, and 5, MeGill College avenue, enlarged; surrounding structures indicate how, by taking advantage of opportunities provided by available air rights, private capital could develop a shopping, theater, office and apartment project larger than New York's Rockefeller Center.

in the national economy of a transportation policy based on legislative and other restrictions inappropriate to modern competitive conditions."

"The fundamental problem," he continued, "still rests in the application by statute, to a substantial segment of rail freight traffic, of rates which are the same today as in 1897 [e.g., the so-called Crow's Nest Pass rates on grain moving in western Canada]. A statutory provision exempting so large a volume of traffic from bearing any share in increased transportation costs, if extended indefinitely, cannot fail to prejudice the balanced economic growth so essential to sound national development and to limit further the ability of Canada's railways to meet the nation's transportation needs."

Toward Unified Regulation?

There are, however, some reasons to believe that the Canadian federal government may be moving—albeit very, very slowly—in the direction of more modernized regulatory procedure, which could hardly help but produce fairer treatment for the railways. Coordinated regulation, under some central authority, of all forms of transportation (rail, water, air, highway and pipe line) was recommended in the report submitted by a Royal Commission on Transportation some three years ago, and there appears to be considerable sentiment in favor of such unified regulation. There already exist federal bodies regulating rail, water and air services, and the federal government has submitted to Parliament a proposal for legislation to give it control over pipe lines.

The major obstacle in the way of eventually coordinated regulation appears to be the historic opposition of the individual provinces to federal control of highway transport. Members of the present federal government at Ottawa apparently favor federal regulation of truck and bus operations, but are mindful of the failure of two previous attempts to achieve it.

There is now pending before the British Privy Council at London, however, an appeal by three provinces from a Canadian Supreme Court ruling which held that the Dominion government does have authority over interprovincial highway traffic. While a Privy Council decision to the same effect might not lead to early legislative action, it is believed that it might result in efforts by the federal government to secure, through negotiation, uniformity of highway transport regulation within the several provinces.

Other "straws in the wind" which lead some observers to believe that the present Canadian federal government favors some form of unified and centralized transport regulation are its steady implementation of other Royal Commission recommendations, such as the proposed regulation of pipe lines and the appropriation of \$7 million a year to recompense the two major railways for the unremunerative task of hauling transcontinental traffic across revenue-barren northern Ontario.

Rate Equalization

Through the Board of Transport Commissioners, the government has likewise made a start on the "heavy job" of equalizing freight rates throughout the Dominion—though whether such equalization will help or hurt Canada's railways is a subject on which there appears to be a wide difference of opinion.

The two major companies have taken the position that rate equalization should not reduce railway revenues; they protested, as productive of "certain revenue losses" and of only "highly problematical possible gains" the first actual step toward equalization—a Transport Board order effective November 15, 1953, providing for a 5 per cent cut in class rates in western provinces, with a compensating rise of 10 per cent in Ontario and Quebec—where highway competition is most severe. This order, designated as an interim move, seems likely to stand,

however, until a larger measure of equalization can be effected by the present target date of January 1, 1955.

Chief Commissioner J. D. Kearney has indicated, however, that the new scale of equalized rates will be made "as fair as possible" to all regions and to the railways. He has intimated that the board may, to some extent, relax its proposals to meet objections from the railways, which contend that they stand to lose "millions of dollars," and by certain business interests. "We do not want to do anything," Mr. Kearney is reported to have said, "where the remedy would do more damage than good. We know this is a delicate and difficult problem. We will look very carefully before we leap, and we will do what we consider fairest to all."

The Transport Board has also held hearings, but has not yet rendered any decision, on a Canadian Pacific application for establishment of a "rate-base rate-of-return" formula designed to enable the company to earn a reasonable return (up to $6\frac{1}{2}$ per cent) on its net capital investment (approximately \$1,146,000,000) in its railroad properties.

Improvement Continues

In the face, however, of 1953's disappointing results, and of uncertainty as to future cost increases, competitive problems and government rate decrees and regulatory policies, both of Canada's major railways continued their long-standing efforts to provide the Dominion with "ever higher standards of service and efficiency." Their doing so reflects, in Mr. Mather's words, "the conviction that in due course the principle of freedom of competition and relief from undue restrictions will receive increasing recognition in Canada's transportation policies," and "confidence that recognition must ultimately be accorded to the necessity of bringing the financial requirements of rail transport into a more equitable relationship with those of other segments of an expanding economy."

Canadian Pacific

His own company, the Canadian Pacific, ordered from the Budd Company last year a total of 173 streamline, all-stainless steel passenger-train cars — including 36 "scenic-dome" lounge observation cars—which will make up 15 complete trains for service between Montreal-Toronto and Vancouver. It likewise moved toward improvement of its secondary passenger services, by installing a large number of new coaches in its Montreal suburban trains, and four Budd-built rail diesel cars on three separate runs. "Experience with these units and their popularity with the traveling public," the CPR president said, "will determine whether additional self-propelled diesel cars will be ordered to supplement or improve secondary passenger services elsewhere on the Canadian Pacific system."

The CPR likewise completed in 1953 dieselization of its Crow's Nest, Kootenay and Kettle Valley route between Medicine Hat, Alta., and Vancouver, B. C., and to support this motive power change completed and opened a \$1-million diesel shop at Nelson, B. C. Total diesel units in CPR service at the end of the year numbered 365—73 of them new in 1953.

The same company put into service "a large number"

of new freight cars of all types; and ordered a \$4-million diesel train ferry to provide fast thrice-daily passenger, freight, truck and auto service between Vancouver and Nanaimo, on Vancouver island.

Canadian National

On the Canadian National, the year's most dramatic improvement was completion, on schedule, in November, of the new 144-mile line from Sherridon north to Lynn Lake, in northern Manitoba, where it will serve new mining operations. Grading and clearing for the new 45-mile Terrace-Kitimat line in British Columbia was advanced during the year, and construction was begun on the substructure for a seven-span bridge over the Skeena river. At the other end of Canada, contracts were awarded for clearing, grading and culverts on a 13.76-mile line relocation in Nova Scotia, and for rehabilitation and minor diversion of 5.61 miles on Cape Breton island. These two latter projects are in connection with construction of a causeway across the Strait of Canso between Nova Scotia and Cape Breton island.

The CNR also announced plans for construction of a modern 1,000-room hotel in its Central Station area at Montreal as part of an extensive terminal development program which contemplates, among other things, erection of a 28-story railway office building.

Other construction projects directly related to the company's rail services included a rail barge slip at Prince Rupert, B. C.; an ore dock extension at Port Arthur, Ont.; improved freight terminals, trackage and yard facilities at Toronto and Montreal; and extension of centralized traffic control and automatic signal systems in Ontario and British Columbia.

As to equipment, the nationally owned company added 103 new diesel units to a fleet which, at the end of 1953, totaled 497 units "placed in selected services where the greatest economies can be realized." It also took delivery on some 4,300 new freight cars, bringing to more than 30,000 the number of new cars put into service since 1945. With 6,000 freight cars still on order, most of them for 1954 delivery, the CNR considers its freight car supply "ample for current needs," with orders insuring "an orderly supply to meet future traffic requirements."

Late in 1953 the company began to take delivery on a 1952 order for 161 coaches and 141 sleeping and parlor cars; and in December received its first Budd rail-diesel car, for service between Fredericton, N.B., and Newcastle.

Experimental "piggyback" service, using railway owned truck trailers, was extended to include Hamilton, Ont.; and a few additional railway operated truck routes were established. These, Mr. Gordon emphasized in his review of the year, "are, and will continue to be, regarded as complementary to rail operations."

Financially, the CNR undertook to simplify its corporate structure by taking steps to retire all outstanding perpetual debenture stocks originally issued by several of the companies now included in the CNR system.

Work continued during the year on the new Quebec, North Shore & Labrador, which is being rapidly built northward for approximately 350 miles from tidewater at Seven Islands, Que., to provide an outlet for newly developed iron ore deposits in the vicinity of Knob Lake.



INCLUDED in the continuing intensive rehabilitation program of the National of Mexico was the ordering of 55 diesel units from U.S. and Canadian builders during 1953.

Mexican Lines' Business Slumps

Lower earnings do not, however, mean end to big rehabilitation program— Pacific railroad outstanding example of growth

By ALFONSO HERNANDEZ LOZANO

Assistant General Manager Pacific Railroad

In contrast with the U. S. economy, which attained a high level in 1953, with output of goods and services at a new peak, the Mexican business level has been showing signs of a slight recession. As reported in last year's Review and Outlook Number of Railway Age, indications of softening in the country's economic activity had appeared by the end of 1952. This situation has continued throughout 1953, with, among others, such consequences as diminishing foreign trade, both export and import, reduction in governmental spending, contraction of domestic markets, etc.

These factors have had a marked effect on railway traffic, somewhat leveling off the upward trend shown in previous years. This situation has affected adversely Mexico's two largest railway systems—the National of Mexico and the Pacific—because they have not been able to reduce expenses proportionately.

Total revenues on the National during the first nine months of 1953 amounted to 561 million pesos, up 10 per cent over 1952.* This revenue increase was derived wholly from higher freight and express revenues, since revenues from passenger service and miscellaneous operations declined. The increased freight revenues were the result solely of higher rates, which became effective November 19, 1952.

Freight carloadings decreased 8.1 per cent; tons moved, 3.3 per cent; and revenue ton-kilometers, 6.6 per cent. The number of passengers carried diminished from 18 million to 16 million, or 11.7 per cent, during the nine-month period covered by this survey. Revenue passenger-kilometers decreased 9.4 per cent, and revenues from passenger transportation, 6.7 per cent.

Departing from custom, Railway Age's Mexican correspondent this year devotes the major part of his report to a property other than the big National of Mexico system. Having moved during the year from the position of chief statistician of the latter to assistant operating head of the newly constituted Pacific road, he is in an unusual position to tell a capsule story about a road which is lifting itself physically by the bootstraps to equip itself to serve the fastest-growing region of the country.

Basic statistics for the National system appear as usual.

^{*}The Mexican peso is exchanged officially at 11.64 cents in U.S. currency.

Rehabilitation of Pacific Railroad High Spot in Mexico's Modernization Program



REVITALIZATION to serve Mexico's fastest-growing area comes from new U.S.-built box cars . . .



. . . and U.S. manufacturéd, all-purpose diesel-electric locomotive units.



THE PACIFIC lifts itself up out of the sand on new 112-lb. rail with the most modern track maintenance machines



used north of the border. High priority has been given to modernization of the railroad.

On the other hand, operating expenses showed a substantial increase in almost every primary account except "Traffic" and "General Expense." Total railway operating expenses increased 16.8 per cent; wages and salaries went up 13 per cent; locomotive fuel increased 31.3 per cent; and materials and supplies increased 8.6 per cent.

Import traffic over the National system during the first nine months of 1953 showed a 9.2 decrease, compared with the 1952 period, while at the same time export traffic enjoyed an 18.3 per cent increase. It is to be taken into consideration that, by and large, import freight moves under substantially higher rates than export traffic, due to the fact that the former is generally constituted of high-rated manufactured products, while the bulk of export traffic is made up of low-rated commodities, such as ores and mineral concentrates.

The increase in operating expenses—particularly wages—stems largely from a flat salary increase granted to all personnel effective November 20, 1952.

Fifty-five new diesel units were ordered during 1953—all from North American sources. They comprise twenty 1,600-hp. road-switchers from Baldwin-Lima-Hamilton; ten 1,600-hp. road units from American Locomotive; twenty 1,500-hp. units from the Electro-Motive Division of General Motors and five 1,600-hp. road units from Montreal Locomotive.

The National continued its program of installing heavier rail on strategic routes. In 1953 the greatest effort was applied to the line between Mexico City and Ciudad Juarez, where 112-lb. rail was laid between Irapuato and Chicalote, a distance of 245 kilometers. Between Irapuato and Guadalajara, rail of the same weight was laid over 124.9 kilometers, the recovered 80-lb. rail being used on the line from Guadalajara to Manzanillo on the Pacific coast. On the Northern divisions, on the line connecting Tampico and Monterrey, the rail-changing job was finished during the year, while 75-lb. relay rail was put down on several sections of the Monterrey-Matamoros (Brownsville) line.

The construction of new terminals started during the last few years has continued. The Puebla terminal is practically completed, while heavy new construction activities at the Valley of Mexico, Nuevo Laredo, Monterrey and Guadalajara terminals, respectively, will resume full swing after a brief interregnum.

The new "Aztec Eagle" train was recently inaugurated. This train, running daily each way between Mexico City and Laredo, Tex., (800 miles) is equipped with luxury coaches and sleeping cars built in Switzerland.

The Pacific railroad, operating between Nogales, on the U. S. border, and Guadalajara, on the central plateau, is Mexico's second largest railroad. Its main

PACIFIC RAILROAD HIGHLIGHTS OF 1953

	(First Nine Months)	
Revenue	carloadinys	45,868
Revenue	tens of freight	,360,889
Revenue	ton-kilometers (thousands)	923,972
Revenue	passengers carried	261,797
Revenue	passenger-kilometers (thousands)	213,030

line extends 1,764 kilometers, of which 36 are owned by the National and are used by the Pacific under a trackage rights agreement. Its properties, formerly owned by the Southern Pacific Company of Mexico, were purchased on December 21, 1951, by the Mexican government. On April 1, 1952, the present corporation was constituted, under joint governmental and private ownership and control.

The Pacific serves four West Coast states of Mexico. At Benjamin Hill, 150 kilometers south of Nogales, it connects with the Sonora-Lower California railroad (built in the period 1935-1948) giving access to the newly created State of Lower California (North). This is one of the fastest-growing areas in Mexico. Between 1940 and 1950 its population increased 70 per cent—85 per cent in those towns served by rail—compared with a rise in Mexico as a whole of 56 per cent.

Pacific Territory

Except for the northern and southern ends, the area served by the Pacific is a rather narrow level strip of land between the western Sierra Madre and the Pacific coast. Several rivers flow through it and even at the northern end, where desert land predominates, the water table is found at less than 100 ft. below the ground; irrigation through the pumping of water from wells has been successfully developed. Investments in this area—particularly for agriculture and electricity—have ranked high in the government programs for the past several years. A comprehensive system of dams and canals has brought about a spectacular agricultural development, which has had a bearing on railway traffic.

In 1953 the government planned to add 1,334,340 acres of irrigated land-an increase of about 76 per cent over the 1,754,410 acres under irrigation by gravity or pumping at midyear of 1953-in the four states served by the Pacific. The state of Sinaloa is scheduled to have a four-fold expansion in the period 1954-1960 and Sonora a more than 100 per cent increase. It is apparent that the Northwest states are at the threshold of a major development of agricultural capacity, which obviously will result in a large increase in rail movement. As to power development, the plants of the Federal Electricity Commission, responsible for developing new sources of power, had in the Pacific road's territory a capacity of 51,394 kw. in midyear 1953 and the projected capacity expansion in the area for the period 1954-1960 calls for an additional 266,000 kw.

Among the products of the area by far the most important are the agricultural commodities—notably wheat, corn, cotton and its products, largely consumed in Mexico, and vegetables, of which tomatoes are the most important, largely exported to the U. S. Other important

commodities produced in the area include products of animals—some exported, but predominantly moving to Mexican destinations—minerals, largely from northern Sonora, exported and moving to Mexican points; and inorganic products largely used locally. Industrial products manufactured or processed in the area include flour, vegetable oils and greases, sugar, soap, canned goods, beer and tequila (Mexican whiskey) fibers and cement.

In the recent past the volume of freight moved by the Pacific has shown a remarkable increase. The number of tons handled in 1952, for example, was 110 per cent over the 1936-1940 average; ton-kilometers were more than 2½ times the five-year average. Revenues have increased more than either tons or ton-kilometers, because of an increase in the general rate level and in the proportion of high-rated commodities, such as industrial products and interline perishable traffic forwarded to the U. S. A conservative estimate predicts a 70 per cent increase in freight traffic during the next ten years.

Taking as a basis the 1936-1940 average, the number of passengers carried decreased 2 per cent, but the number of passenger-kilometers increased 247 per cent, due to a substantial increase in average trip length.

When the present management took over, the property as a whole was in poor physical condition. About 81 per cent of the main line was laid with 65-lb. rail, badly worn. About 92 per cent of the ties replaced in the last 10 years were untreated, which accounts for their short life and bad condition. Ballast was entirely lacking over considerable portions of the line, and was insufficient throughout. The motive power and rolling stock were generally old, obsolete and inadequate.

As the overwhelmingly predominant owner, and with chief responsibility for the property, the government has given high priority to the reconstruction and modernization of the road. Financial backing has been granted through direct investment in the railroad or through guarantees for domestic and foreign loans.

An Uphill Fight

Present physical conditions handicap the expansion of traffic and, therefore, of revenues, and at the same time produce low efficiency and high maintenance and transportation costs.

Add to the 28.5 million pesos invested in 1952, more than 100 millions were appropriated in 1953—mainly for new 112-lb. rail (124 kilometers), intensive ballast and tie renewals; thirteen 1,600-hp. Alco diesel units and a total of 384 Pullman-Standard freight cars. A 150 million-peso investment program has already been drawn up for 1954, which will permit reaching almost the midpoint in the total rehabilitation program.

The total job of rehabilitation is estimated to cost 562 million pesos, including road, equipment and related facilities. The plan calls for totally reconstructing the track, laying it with 112-lb. rail, 100 per cent dieselization, and additional new freight cars, as well as other additions and betterments. The whole job is scheduled to be completed in its major items in 1957 or 1958.

The forecast of revenues and expenditures shows that the burden resulting from the rehabilitation program will not produce an unsupportable capital structure and that the rehabilitation program, despite its heavy financial commitments, can be carried through successfully.



YARD AND TERMINAL projects comprised the largest category of railroad construction work during 1953. This means that the railroads are aware of the need for pro-

viding facilities which speed up and expedite the handling of freight traffic. The modernized Blue Island retarder yard of the Indiana Harbor Belt comes in this category.

Construction Holds High Level

Yard and terminal projects headed list of property-betterment activities in 1953—Bridge work second in dollar volume and locomotive shops third

By HALBERT W. HALL
Associate Editor

With an eye to the future and the will to progress, the railways of North America have continued to push their programs for improvement of fixed plant as an answer to increased competition and rising operating costs. That these programs have been soundly conceived and executed and are already paying dividends is indicated by the improved operating results for the roads as a whole. For instance, a comparison of the best available estimates for the Class I roads for 1953 with the results for 1952 reveal a 4.3 per cent increase in net railway operating income against increases of 0.9, 1.6 and 0.4 per cent, respectively, in carloadings, operating revenues and operating expenses.

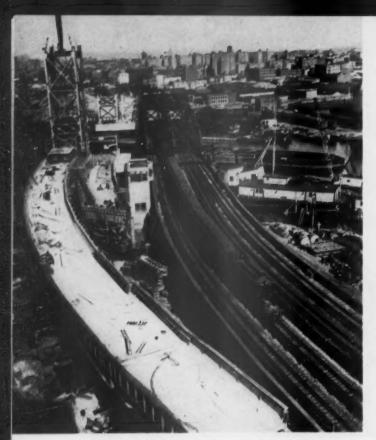
To secure information regarding the current status of these programs, particularly the volume and character of the work carried out in 1953 and now under way, a questionnaire was addressed to 451 railroads, large and small, in the United States, Canada and Mexico. Of these

335, or 74 per cent, submitted replies. Of the roads replying, 120 supplied statements giving the status of authorized capital expenditures for work in progress during 1953. The data secured have been itemized by categories and are tabulated herewith.

Yards and Terminals—Largest Item

The \$213,333,677 estimated cost of work authorized for yards and terminals represents 36 per cent of the total of all classified work. This is by far the largest volume for any single category. Of this money, \$68,323,343 was estimated as having been spent in 1953, while \$66,893,-187 will be available for work in 1954. The difference between the sum of the last two items and the total estimated cost represents authorized money spent prior to 1953 on projects which were not completed at the beginning of that year.

When finished, the Pennsylvania's Conway yard, just west of Pittsburgh, now reported 12 per cent complete, will be one of the largest classification yards in the



BRIDGE CONSTRUCTION loomed large in the propertyimprovement picture during the past year and bids fair to continue at a high level in 1954. Shown under construction here is the New York Central's new vertical lift bridge across the Harlem river at New York.

United States, with an estimated capacity of 8,000 cars per day. This project alone will have a total estimated cost of \$31,000,000. Other important yards which were under construction during 1953 include the Radnor yard of the Louisville & Nashville at Nashville, Tenn. (\$10,500,000); the Ernest Norris yard of the Southern at Birmingham, Ala. (\$9,200,000); the Roseville yard of the Southern Pacific at Roseville, Cal. (\$4,700,000); and the Bensenville yard of the Milwaukee at Bensenville, Ill. (\$5,500,000). The latter three projects were reported as being 100 per cent complete at the close of 1953.

A major change in the relative standings of the various construction categories during 1953 occurred in the expenditures for "new lines and additional tracks," which dropped from second place to fourth. Now in second place is "bridge work" which moved up from third position, while "locomotive shops and servicing facilities" has assumed third place.

This latter category is a most important factor in connection with the increase in the number of diesel locomotives in operation and the complete dieselization of many lines or territories. The roads have found that adequate diesel servicing facilities are a "must" if this type of power is to be operated at its maximum efficiency. The carryover of \$9,800,000 available for work in this category in 1954 indicates that a substantial volume of such projects remained uncompleted as the year came to a close.

A number of large projects are included in the "bridge work" category. Looming large in this picture are four vertical lift bridges in Cleveland over the Cuyahoga river, which are being constructed by the New York Central. Other important projects in this classification include the reconstruction of the Northern Pacific bridge over the Columbia river at Pasco, Wash., a new bridge over the Missouri river at Chamberlain, S. D., by the Milwaukee, and renewal of the Southern's Wabash River bridge at Mt. Carmel, Ill., on an off-line relocation.

The volume of grade separation work showed a large increase. This expenditure went up to \$12,000,000 from the \$8,000;000 spent in each of the years 1951 and 1952. With a \$20,000,000 carryover—second among the various categories—this work should loom large in the 1954 picture. The expansion of this activity is not unexpected in view of the greater emphasis on grade crossing elimination as a peacetime activity and the large-scale construction of superhighways.

Bridge Work Moves Ahead

Expenditures for new lines and additional tracks, which had stood high in comparative volume for a number of years, dropped sharply in 1953 due to the completion during 1952 of a number of important projects. The carryover in this classification, now sixth in importance, does not provide much promise for renewed activity during 1954.

During 1953, as in the past, the preponderance of construction work was carried out by Class I line-haul carriers. However, this does not mean that the shorter lines are not adding to and improving their properties. From the reports received covering 54 of these smaller railroads—which total also includes a number of Class I switching and terminal roads—1953 expenditures amounted to \$10,150,000 compared with \$9,740,000 in 1954.

One of the largest construction projects under way at the present time, and scheduled for official completion and opening on April 1, 1954, is the New Orleans Union Passenger Terminal. A number of other large and important projects are also now in progress for which cost figures are not available. These include the Pennsylvania's extensive terminal improvements at Philadelphia and Pittsburgh.

Following is a detailed report by roads of all construction projects, in progress or completed during the year 1953, the individual cost of which approached or exceeded \$1,000,000.

CLASSIFICATION OF CONSTRUCTION WORK IN 1953

	Total	Estimated Amount	
Construction	Estimated	Chargeable	Estimated
Category	Cost	This Year	"Carry-Over"
New lines, additional tracks Revisions of grade and alinement Yards and terminals	213,333,677	11,023,993	\$ 7,497,168 6,828,317 66,893,187 13,625,416
Buildings Passenger Stations Freighthouses Car Shops Other Buildings	14,046,469 9,927,869 20,658 416 25,259,863	9,539,774 5,762,030 4,380,219	2,953,400 1,038,160 13,954,065 3,356,788
Locomotive Shops and Servicing Facilities Industrial Tracks Tunnels	53,584,142 25,171,201 5,188,019 73,969,207	15,072,751 3,116,268 11,959,137	9,822,791 3,156 155 1,188,665 20,285,255
Total	\$591,118,131	\$207,631,926	\$150,599,367



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RAILWAY CONSTRUCTION IN NORTH AMERICA

(Figures in parentheses indicate percentage of completion at the end of

UNITED STATES

Alaska

Important Work Undertaken: Construct new yards at Anchorage, \$1,613,000 (50).

Atchison, Topeka & Santa Fe

Important Work Undertaken: Raising grade, Holliday, Kan. (100); curve reduction, Oklahoma division (90); C.T.C. Newkirk, Okla. (50); new store department facilities, Corwith, III. (20); construct new diesel shop, Argentine (Kansas City), Kan. (75); revision of yard, Belen, N. M., (100).

Baltimore & Ohio

Important Work Undertaken: Reconstruction of bridge, Baltimore, Md., \$1,500,000 (100); elimination of grade crossing at Hanover and Potee streets, Baltimore, \$3,200,000 (45).

Canton

Important Work Undertaken: Ore unloader with free digging ca-pacity of 1,900 tons per hour based on 38-sec. cycle and bucket load of 20 tons; receiving hopper, 100 tons; adjustable voltage direct current control, Baltimore, Md., \$1,200,000 (100).

Chesapeake & Ohio

Chesapeake & Ohio

Important Work Undertoken: Replacement of steel spans in viaduct, Tredegar street to 14th street, and reconstruction of three other bridges. Richmond, Va., \$3,381,000 (98); replacement of steel spans in viaduct, 14th street to 18th street, Richmond, \$2,216,000 (20); installation of C.T.C., including track changes, Westham, Va., to Bremo, and from Balcony Falls, Va., to Lynchburg, \$1,007,625 (90); bridge on new line, Snowden, Va., \$1,429,000 (60); construction of diesel shop at Clifton Forge, Va., and diesel-locomotive servicing facilities at Clifton Forge and Newport News, \$2,727,350 (90); construction of diesel-locomotive servicing facilities at Huntington, W. Va., Russell, Ky., and on Hocking division, \$2,524,735 (98); car retarder system in eastbound classification yard, Stevens, Ky., \$1,069,000 (55); construction of tracks to industrial plants, Robbins (Teays), Ohio, \$1,150,000; installation of C.T.C., including expansion of passing tracks, Cheviot, Ohio, to Drew, Ind., \$2,101,690; installation of C.T.C., including extension of passing tracks, Prev., \$1,040,000; installation of C.T.C., including extension of passing tracks, Cheviot, Ohio, to Drew, Ind., \$2,101,690; installation of C.T.C., including extension of passing tracks, Prev., \$1,040,000; installation of C.T.C., including extension of passing tracks, Cheviot, Ohio, to Drew, Ind., \$2,101,690; installation of C.T.C., including extension of passing tracks, Cheviot, Ohio, to Drew, Ohio, to Drew, Ind., \$2,000,000; installation of C.T.C., including extension of passing tracks, Cheviot, Ohio, to Drew, Ind., to Peru, \$1,546,000; installation of C.T.C., including extension of passing tracks, Cheviot, Ohio, to Drew, Ind., \$2,540,000; installation of C.T.C., including extension of passing tracks, Cheviot, Ohio, to Drew, Ind., \$2,540,000; installation of C.T.C., including extension of passing tracks, Cheviot, Ohio, to Drew, Ind., \$2,540,000; installation of C.T.C., including extension of passing tracks, Cheviot, Ohio, to Drew, Ind., \$2,540,000

Chicago & North Western

Important Work Undertaken: Construction of four lane highway bridge to replace viadact over Proviso yard, Proviso, Ill., \$2,000,000 (25); relocation of 6.2 miles of double track around O'Hare (Chicago) International airport, Proviso to Des Plaines (joint with the Milwaukee and city of Chicago), \$4,000,000 (75); grade separation on Broadway street, Council Bluffs, Jowa, \$1,600,000 (10).

Chicago, Burlington & Quincy

Important Work Undertaken: Construction of freighthouse and rearrangement of yards, Morton Park, Ill., \$4,295,000 (50); grade and line revision between Monrue City, Mo., and Clarence, \$1,177,888 (95); line facilities for continuous cab signaling of locomotives between Chicago and Aurora, Ill., \$1,365,000 (35); install C.T.C. between Pacific Jct., Neb., and Lincoln, \$1,445,000 (60).

Chicago, Milwaukee, St. Paul & Pacific

Important Work Undertaken: Construct additional tracks and convert existing flat switching yard to 70-track retarder yard, Bensenville, Ill., of new bridge over Missouri river (government project), Chamberlain, \$5,500,000 (100); revision of grade and alinement, including construction S. D., \$6,500,000 (100).

Chicago, Rock Island & Pacific

Important Work Undertaken: Construction of 34.52 miles of new line and the removal of 41.09 miles of present line, Atlantic, Iowa, to Council Bluffs, \$8,027,000 (100); construction of diesel shop and other facilities including retirement of old steam facilities, Chicago, \$1,334,780 (100); relocation of main line, including two bridges, in connection with government flood-control work, Hutchison, Kan. (100): construct 6.6 miles of new line, and remove present main line, Adair, Iowa, \$1,284,000 (2).

Chicago South Shore & South Bend

Important Work Undertaken: Construct 4.3 miles of double track buth of East Chicago, Ind., and retiring approximately the same amount trackage now lying in streets of East Chicago, \$1,544,000 (65).

Denver & Rio Grande Western

Important Work Undertaken: Construction of hump-retarder yard, Grand Junction, Colo., \$4,220,000 (100).

Important Work Undertaken: Construction of track facilities to Ford Motor Company plant, Mahwah, N.J., and Suffern, N.Y., (55): construction of diesel shop facilities, including service and repair shop, storeroom, locker room, and a lube-oil building, plus rearrangement of tracks and installation of sanding and fueling facilities, Youngstown (Brier Hill), Ohio (100): enlargement of diesel shop facilities, including extension to the service shop, and repair shop, construction of a lye vat and a two-story employees' service building plus the rearrangement of tracks and other servicing facilities, Marion, Ohio (100): elimination of highway crossings on the Eric and the Lackawanna, based primarily on the relocation of 6.89 miles of Eric main line, including the con-

struction of 13 single-span, and 7 multiple-span railway bridges, two multiple-span overhead highway bridges, alteration of an existing overhead highway bridge, building 3 pedestrian subways and 29 drainage structures, construction of a passenger station and plaza on the Eric, moving Lackawanna passenger station to a new foundation, construction of a freighthouse and a driveway, miscellaneous street pavements and sidewalks, plus installation of diesel-terminal facilities, Coraing N.Y.,

Fort Dodge, Des Moines & Southern

Important Work Undertaken: Construction of new boiler, Topping turbine and other incidental improvements, Fraser, Iowa, \$1,000,000

Jersey Central Lines

Important Work Undertaken: Construction of weathound classification yard, including installation of car retarders, improvement of car-repair facilities, and installation of signal equipment, Allentown, Pa., \$4,100,000 (100); grade crossing elimination project between Dunellen, N. J., and Plainfield, \$7,000,000 (28).

(New York & Long Branch) Important Work Undertaken: Construction of double-track main line on embankment across Matawan Creek valley, including abandonment of existing timber trestle, Matawan, N. J., \$1,185,000 (98).

Kansas City Southern

Important Work Undertaken: Construct transportation yard, engine terminal, shop layout, office buildings, North Shreveport, La., \$5,000,000 (5).

Lakefront Dock & Railroad Terminal

Important Work Undertaken: Installation of two Hulett ore unloaders and reconditioning of two others, Toledo, Ohio, \$3,000,000 (100).

Long Island

Important Work Undertaken: Installation of wayside facilities for automatic speed control, \$2,396,243 (100); elimination of two grade crossings at Terrace Place and Central avenue, Valley Stream, N.Y., \$3,239,216 (40); elimination of two grade crossings at South Oyster Bay road and Broadway, Massapequa, N.Y., \$1,144,380 (85).

Louisville & Nashville

Important Work Undertaken: Installation of C.T.C., including track changes, Corbin, Ky., to Etowah, Tenn., \$1,800,000 (20); construction of receiving yard, classification yard, departure yard, and other terminal facilities, Radnor yard, Nashville, Tenn., \$10,546,600 (70).

Missouri-Kansas-Texas

Important Work Undertaken: Revision of grade and alinement, involving relocation of several sections of main track, totaling 8.20 miles, work being done by federal government because of the construction of Ft. Gibson dam on Grand river, near Wagoner, Okla., \$2,000,000 (100); construction of Garza-Little Elm reservoir on Elm Fork of Trinity river, involving relocation of 4.35 miles of branch-line track, work being done by the Federal government, between Garza, Tex., and Lewisville, \$1,241,400 (99.)

Missouri Pacific

Important Work Undertaken: Construction of a main track and elevated structure connecting Lesperance Street yard with 12th Street yard, St. Louis, Mo., \$1,252,000 (100): raising main tracks at levee crossings and in unprotected areas, including construction or reconstruction of all fills and bridges, Alton, III., to Gale, \$5,555,000 (70).

Nashville, Chattanooga & St. Louis

Important Work Undertaken: Construction of 6 miles of freight main tracks to connect existing tracks to a new joint freight yard (Radnor yard) now under construction by the Louisville & Nashville, Nashville, Tenn., \$3,000,000 (90); install C. T. C. for 138 miles including rearranging and extending various passing tracks between Bruceton, Tenn., and Memphis, \$1,500,000 (60).

New Orleans Union Passenger Terminal

Important Work Undertaken: Construction of foundations and erection of structural steel for passenger station, \$2,250,000; construction of coach yard facilities and installation of signaling and interlocking facilities, more than \$1,000,000. Official scheduled completion date, April, 1954.

New York Central

New York Central

Important Work Undertaken: Reconstruction of bridge, New York (50); construction of diesel-locomotive servicing facilities, Minoa, N. Y. (100); elimination of grade crossings at Genesee street, W. Seneca street, Erie and Terrace streets, and at Church street, Buffalo (100); removal of two present piers and construction of a new pier, East Boston, Mass. (20); construction of facilities for inspecting, fueling and servicing diesel locomotives, Buffalo (90); reconstruction of bridges at Seneca street and Hamburg street, Buffalo (70); construct 258-ft, single-track, vertical-lift bridge to provide a 200-ft, clear channel, bridge No. 4 over Cuyahoga river, Cleveland (100); construct a 217-ft, single-track vertical-lift bridge to provide a 200-ft, clear channel, bridge No. 20 over Cuyahoga river, Cleveland (20); construct a 265-ft, double-track, vertical-lift bridge to provide a 250-ft, clear channel, bridge No. 20 over Cuyahoga river, Cleveland (3); conversion of steam locomotive shop buildings to diesel shop buildings, Cleveland (100); single-track branch (Landisburg branch). If miles, from coal fields, Russellville, W. Va. (20); construct mail and parcel post terminal, Cleveland, (35); construct tunnel lining, Weehawken, N. J.

(Michigan Central) Important Work Undertaken: Construction of bridges carrying Grand Trunk Western, New York Central and Michigan Central over Edsel Ford Expressway, Detroit (4); construction of bridge carrying Kirby Avenue team-yard tracks and driveways over Edsel Ford Expressway, Detroit (92).

(Cleveland, Cincinnati, Chicago & St. Louis) Important Work Undertaken: Construct grade separation at West 16th street, Indianapolis (100). (Indiana Harbor Belt) Important Work Undertaken: Expansion of



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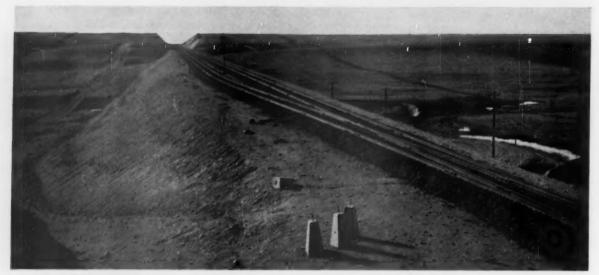
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CAPITAL INVESTMENTS in new line construction contracted sharply during 1953 with the completion of some

major projects. This view shows a section of the Union Pacific's relocated line at Sherman Hill in Wyoming.

RAILWAY CONSTRUCTION IN NORTH AMERICA cont.

Blue Island Yard, Riverdale, Ill. (90); construction over Congress Street super-highway, Bellwood, Ill. (50). (Pitsburgh & Lake Erie) Important Work Undertaken: Construction of facilities for maintaining diesel locomotives, McKees Rocks, Pa. (70). The approximate cost of these projects, and others involving, individually, expenditures of \$100,000 or more, will amount to \$107,760,000.

New York, Chicago & St. Louis

Important Work Undertaken: Installation of C.T.C., including track changes, Claypool, Ind., to Van Loon (99); grade elimination project at Fort Wayne, Ind., \$1,409,158 (5).

New York, New Haven & Hartford

Important Work Undertaken: Construction of Market terminal which includes bulk yard facilities, drainage improvements, utilities, driveways, mechanical department facilities and land improvements at Boston, Mass., \$2,000,000 (70).

Norfolk & Western

Important Work Undertaken: Construct addition to grain elevator complete with operating machinery, Sewells Point, Va., \$1.000,000 (50): installation of two electrically operated traveling sidewall loaders with mechanical trimming machines, coal pier No. 4, Lamberts Point, Va., \$1,114,000 (100): extension of eastbound receiving and forwarding yards at Bluefield, W.Va., including 1.9 miles of new 132-lb. rail with 10 turnouts and 1.38 mi. of secondhand 131-lb. rail with 73 turnouts, installation of signals, floodlights, a track scale, and construction of yard buildings and other facilities, \$2,503,000 (90): construct fireproof engine service building, 200,000-gal, water tank and pipe lines, engine washing and ash handling facilities, wash and locker building, round-house office, power substation and transmission lines, tracks, paving, etc., at Bluefield, \$1,339,000 (50): construct engine-service building, including water-supply facilities, engine washing facilities, ash-handling facilities, and other improvements to enginehouse, drop pits, inspection pits, oil house, roadways, tracks, and power lines, Portsmouth, Ohio, \$2,300,000 (99): provide railway owned communication system for dispatchers, local and long-distance telephone circuits, telegraph and printers service for cutire system, \$1,344,000 (55).

Northern Pacific

Important Work Undertaken: Reconstruction of bridge over Columbia river, Pasco, Wash., \$5,500,000 (60).

Important Work Undertaken: Construct new trackage, new yard office and subyard office, install seven light towers in east yard, six light towers in main yard, pneumatic tube system, radio and paging facilities, and control towers at Ogden, Utah, \$2,471,370 (45).

Pennsylvania
Important Work Undertaken: Construction of Philadelphia improvements (Step 1) weat of Schuylkill river (94), and east of Schuylkill river (64); construction of yard and tracks to serve Studehaker Corporation, Adams, N. J. (99); construction of siding and yard additions to serve U. S. Steel plant, Morrisville, Pa., (81); construction of pre-unloading facilities, Philadelphia, (95); construction of freight station at Butler and Senviva Streets, Philadelphia (100); construction of freight-car repair shop, Hollidaysburg, Pa., (10); construction of acrap dock and reclamation plant, Hollidaysburg (95); passenger-terminal improvements. Pittshurgh (51); construction of 8-mile spur to Armstrong Mills, Ohio, including yard tracks and yard extension, Powhatan Point, Ohio (100); construct interchange track with Canton Railroad at Baltimore, Md., (0); yard development, Conway, Pa., (12). The total approximate cost of these projects is \$119,283,240.

Portland Terminal

Important Work Undertaken: Construct new yard tracks and signaling at Portland, Me., \$1,600,000 (95).

Important Work Undertaken: Reconstruction of bridges and installation of new signal controls on the Reading Belt branch, Reading, Pa., \$3,350,000 (77).

Sacramento Northern

Important Work Undertaken: Retire 13,574 ft. frame bent trestle and replace with fills and ballast deck trestle on creosoted pile bents, Arcade, Cal., to Riverview, \$1,260,000 (85).

St. Louis-San Francisco

Important Work Undertaken: Construct new terminal office, rearrange train yard, modernize rip yard, retire old mechanical facilities, construct modern diesel facilities, Kansas City, Mo., \$2,400,000 (10).

Seaboard Air Line

Important Work Undertaken: Construct new yard (27) and diesel shop (68) at Hamlet, N. C.

Southern

Important Work Undertaken: Construction of train yard and engine terminal facilities, Ernest Norris yard, Birmingham, Ala., \$9,200,000 (100): extension of present yard and construction of engine-terminal facilities, Oliver yard, New Orleans, La., \$1,995,000 (100): extension of Citico yard and connection track, Chattanooga, Tenn., \$13,800,000 (25): renew Wahash River bridge on off-line location, Mt. Carmel, 25); renew Wahas II., \$1,311,000 (8).

Southern Pacific

Southern Pacific

Important Work Undertaken: Conversion of flat-switching yard to an automatic car-retarder yard, Roseville, Cal., \$4,692,210 (100): construction of hy-pass to serve Los Angeles Harbor area, Downey, Cal., to Puente, \$4,290,000 (80): construction of diesel-servicing facilities, consisting of shop, store building, repair pits, locker building, sewer lines, lighting facilities, equipment handling devices, various communication facilities, tracks, steam, air sewer and electric lines, Roseville, Cal., \$1,645,559 (95): installation of C.T.C., including track changes on 99.1 miles of main track, involving extension of 13 sidings to accommodate 110-car trains and retirement of 6 sidings, Klamath Falls, Ore, to Cresent Lake, \$25,68,596 (98): installation of C.T.C. system on 96 miles of main track, extending 11 sidings, and retiring 3 sidings between Crescent Lake, Ore, and Eugene, \$3,684,250 (10).

(Texas & New Orleans) Important Work Undertaken: Convert Englewood freight terminal into gravity switching yard by constructing 254,351 track-feet of additional track, hump structure and embankment for crest of gravity yard, provide car-retarder system, including power-operated switches and automatic switch and speed control, Houston, Tex., \$5,464,000 (10).

Spokane, Portland & Seattle

Spokene, Portland & Seattle
Important Work Undertaken: Construct 1.5-million-bushel reinforced
concrete grain elevator consisting of work house 54 ft. by 49 ft. and
235 ft. high and 23 bins 123 ft. high, installation of car dumper capable
of unloading 18,000 bu. of grain per hour, 750,000-bu. capacity leanto
to be added upon completion of the bins for bulk storage of grain,
Vancouver, Wash., \$1,850,000 (50).



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CONTINUED PURCHASE of diesel locomotives focused strong pressure on the construction of adequate repair

and servicing facilities such as the Rock Island's new shop at Chicago.

RAILWAY CONSTRUCTION IN NORTH AMERICA cont.

Terminal Railroad Association of St. Louis

Important Work Undertaken: Construction of mail-handling facilities including a building, 121 ft. by 206 ft., containing sorting platforms and auxiliary facilities, construction of mail-car shed, 164 ft. by 420 ft., with auxiliary shed, Union Station, St. Louis, \$3,000,000 (100).

Union Pacific

Union Pacific

Important Work Undertaken: Replace 10.73 miles of double-track main line with 10.19 miles of double-track main line in new locations and nequire 220 acres of right-of-way between Rawlins and Daleys Ranch, Wyo., \$2.181,475 (100); exchange of land with the state and revision of grade and alinement between M.P. 50.34 and M.P. 52.31 and between M.P. 53.27 and M.P. 54.50 on account of reconstruction of Columbia River highway, Wyeth, Ore., to Viento, \$1,000,063 (100); construction of 14.12 miles of new line, replacing 14.09 miles of present line which will be under water upon completion of McNary dam, Juniper, Wash., to Attalia, \$2.631,417 (100); replace 7.4 miles of Yakima branch and 5.7 miles of Wallula branch with owned and joint track with Northern Pacific, replace 2 miles of the Spokane main line with 2 miles of track in new location, exchange 198 acres of property for 283 acres due to present line being under water upon completion of McNary dam, between Attalia, Wash., and Hodges (Yakima branch), and between Attalia and Reese, (Wallula branch), \$1,384,489 (100); construction of Az miles of track for operation as westbound main line, including relocation of line between Cheyenne, Wyo., and Speer, construction of six passing tracks, locomotive watering station and stockyards, Cheyenne, Wyo., to Laramic, \$14,300,000 (100); construction of additional yard tracks, Salt Lake City, Utah, \$4,781,000 (50); install automatic cab controlling circuits on both main lines and four-indication wayside signals between Green River, Wyo., and Ogden, Utah, \$1,100,000 (35); replace semaphore signals with color light signals and rearrange side tracks at various locations between Hinkle, Ore., and The Dallas, \$1,249,100 (50); construction of new eastbount freight yard north of the main tracks and rearrange northerly tracks at 7th Street, Kanaas City, Kan., \$3,776,798 (70).

Union Railroad

Important Work Undertaken: Construction of central classification and storage yard at Duquesne, Pa., \$4,000,000 (40).

Western Maryland

Important Work Undertaken: Construct 400-ft. extension to ore piernew 15-ton ore unloader and power supply at Port Covington, Baltimore, Md., \$1,500,000 (100).

Western Pacific

Western Pacific

Important Work Undertaken: Replacement of 20.36 track-miles of 85 lb. rail with 115-lb. rail and provide 6-in. ballast cushion. Gaskell. Nev., to Krum, \$925,000 (100): replacement of 22.76 track-miles of 112-lb. rail with 132-lb. rail at various locations and provide 3-in. to 6-in. ballast cushion, Ellison, Nev., to Beowawe, \$1,130,000 (100): replace 5,100 lln. ft. of timber foot-blocks with concrete lining in three main line tunnels, ellminate two tunnels by line change and one tunnel by daylighting on Northern California extension, \$2,700,000 (65): install 90 miles of traffic control system including extension of various sidings to 110-125 cars capacity between Oakland, Cal., and Stockton. \$912,000 (30): construct new yard, pipe lines, roadways and miscellaneous mechanical and other facilities to serve Ford Motor Company at Milpitas, Cal., \$1,200,000 (30).

CANADA

Canadian National

Important Work Undertaken: Construction of car-shop facilities, including a repair shop, paint, track work, extension to a stores building and work equipment shop, Pointe St. Charles, Montreal, Que., \$4,000,000 (92); construction of facilities for repairing diesel locomotives, including remodeling interior of existing electric locomotive shop, together with installation of a 100-ton drop table, five crossover bridges, a 35-ton overhead electric traveling crane with 10-ton auxiliary, together with sanding facilities, driers, cleaning equipment and incidental trackwork, Pointe St. Charles, Que., \$1,300,000 (35); expansion and improvement of track facilities, dry and team tracks, to replace facilities destroyed by fire. Montreal, Que., \$2,350,000 (90); construction of freight shed buildings, a general freight-office building, platforms, teamways and team tracks, to replace facilities destroyed by fire. Montreal, Que., \$7,000,000 (85); construction of improvements to Central Station approach facilities, including extension of four stub tracks to form through tracks, necessitating removal of five buildings, the extension of subtrack area, South Plaza, completion of the west end of Lagauchetiere Street bridge and construction of a double-track span across St. Antoine street and of an additional ladder lead track across streets. Montreal, Que., \$4,000,000 (90); diversion of two main-line passenger tracks and enlargement of yard including installation of an inter-communication system, construction of car-repair buildings and incidental car-repair tracks, platforms, sewers and paving between trackage. Mimico, near Toronto, Ont., \$4,000,000 (90); diversion of two main-line passenger tracks, platforms, sewers and paving between trackage. Mimico, near Toronto, Ont., \$4,000,000 (90); diversion of two main-line connection of a new marshalling yard in Parish of St. Laurent, Montreal, Que., \$10,000,000 (10); construction of new express garage and office building, Toronto, Ont., \$4,750,000 (10).

Canadian Pacific

Important Work Undertaken: Construct facilities for operation and maintenance of diesel locomotives, Kootenay and Kettle Valley divisions, \$2.121,806 (100): relocation of 8.23 miles of new main track and 4.45 miles of yard tracks, including 24 turnouts, station freight shed and other terminal facilities, Thetford Mines, Que.. \$2,200,000 (50); construct 7 story extension 60 ft. by 300 ft. to Windsor station, Montreal, Que., \$1.650,000 (50); installation of automatic block-signals in conjunction with extension and rearrangement of sidings between M.P. 0 and 117.3 on North bay Subdivision, \$1.400,000 (100).

MEXICO

National Railways of Mexico

National Railways of Mexico
Important Work Undertaken: Construction of railway terminal, including a 14-story administration building, a passenger station with modern facilities, and a freight terminal in a new industrial district about 30 miles outside Mexico City, \$11,574,000; improve earthwork between Felipe Pescador and Torreon, and remove silt from Simon dam (100); construct dam in Cardenas (100); replace light rail with 112-lb, rail including accessories for 246 kilometers between Irapuato and Chicalote (100); replace light rail with 112-lb, rail for 259 kilometers between Irapuato and Guadalajara (100); replace light rail with 80-lb. rail for 356 kilometers between Guadalajara and Manzanillo (70); replace light rail with 75-lb, rail for 40 kilometers, Jimenez to Rosario (90); renew light rail with 55-lb, and 85-bh, rail, Monterrey to Matamoros (100); replace light rail with 54-bh, and 85-bh, rail, Monterrey to Matamoros (100); replace light rail with heavier rail, Yurécuaro to Los Reyes (35).





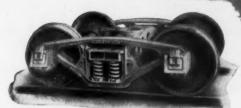


TYPE "H" TIGHTLOCK COUPLER AND ATTACHMENTS

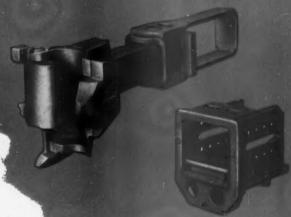




SWIVEL SHANK COUPLER AND YOKE



BUCKEYE CUSHION-RIDE FREIGHT CAR TRUCK



TYPE "F" INTERLOCKING COUPLER AND ATTACHMENTS



BUCKEYE SIX-WHEEL TRUCK





RIDE-CONTROL (A-3) FREIGHT CAR TRUCK



BUCKEYE EIGHT-WHEEL TRUCK

Columbus, Ohio

Chicago, III.

Operations

(Continued from page 18) allowed to expire September 30, 1953. (Railway Age, October 5, 1953, page 5.1

In advising Mr. Faricy of the commission's decision to let No. 866 expire, Commissioner Knudson said: "Should car service deteriorate with the result that the car supply again becomes tight or short, immediate consideration will be given to the reissuance of an order similar to No. 866."

Four Defendants Added In Per-Diem Proceeding

Railroad complainants in the perdiem case have named four more roads as defendants in that proceeding. The L.C. last week received an "amended complaint," adding as defendants the East Tennessee & Western North Carolina, Mississippi & Skuna Valley, New Jersey & New York and the Rutland.

Initial hearings in the case have been scheduled for January 18, in Washington, D.C.

Rates & Fares

I.C.C. to Hear Argument On Tariff Simplifier

Division 2 of the Interstate Commerce Commission has voted to hear oral argument on the railroads' application for general relief from the Fourth Section's long-and-short-haul clause, to permit carriers with indirect routes to meet the competition of direct routes, without circuity limitations or other restrictions of any kind.

The application (F.S.A. 28580) is part of the tariff simplification program being carried out by the Railroad's Tariff Research Group. The oral argument is expected to be held next month.

Meanwhile, the effective date of the circuity limitation which the commission attached to the Fourth Section relief it granted in connection with the No. 28300 class rate adjustment was automatically extended beyond the January 1, 1954, deadline that had been fixed by Division 2. Such extension resulted from the railroad petition asking the commission to override the division (Railway Age, December 14, 1953, page 13).

The Interstate Commerce Act, Section 17 (8), provides that an appeal from a division order which has not become effective shall stay the order "pending disposition of the matter by the commission."

New Haven Seeks Boost In Commutation Fares

The New Haven has petitioned the Interstate Commerce Commission for authority to boost its interstate commuter fares by 33 1/3 per cent.

The road also asked permission to make a similar increase in New York intrastate commuter fares. Present New York fares were placed in effect February I, 1951, after an I.C.C. ruling raised them to the interstate level.

A petition for a 33 1/3 per cent in commuter fares within Connecticut, Rhode Island and Massachusetts will be filed with the state regulatory commissions in those respective states, the New Haven advised the L.C.C.

Commutation business is a big part of the New Haven's total passenger business, the road said. It noted that since 1946 regular one-way coach fares have gone up 53.4 per cent, while commuter fares have increased only 17 per cent.

The proposed increase would result in a "substantial addition" to the New Haven revenue, the road added.

Haven revenue, the road added.

New Types of Tickets—The New
Haven also proposes to discontinue its
present book tickets for commuters—

both the unrestricted 60-ride type and the restricted 46-ride type. These would be replaced by a "calendar month type of ticket," available on both a restricted or unrestricted basis.

Competitive Transport

\$575 Million Apportioned For Federal-Aid Highways

The Department of Commerce has apportioned to the states the \$575 million authorized as federal aid for highways in the next fiscal year beginning July 1. The funds will be expended under supervision of the department's Bureau of Public Roads.

The \$575 million includes \$247.5 million for the so-called primary system of federal-aid highways; \$165 million for the secondary system; \$137.5 million for federal-aid highway projects in urban areas; and \$25 million for the "National System of Interstate Highways"

The funds apportioned are those authorized by the Federal-Aid Highway Act of June 25, 1952. They became available as of January 1, 1954, and will remain available until June 30, 1957.

Accounting

A.A.R. Bureau Issues Unit Price, Wage Index

The Bureau of Railway Economics of the Association of American Railroads has issued the first of a series of quarterly bulletins it will publish to show indexes of average unit prices of railway materials and supplies, charge-out prices and wage rates.

The base for the index of average unit prices of materials is the midyear average of 1947-49, which is similar to that used by the U. S. Bureau of Labor Statistics for its wholesale and retail price indexes. The indexes are calculated with and without fuel prices as factors.

The total index, including fuel, for the country as a whole reached an all-time high of 123.8 in October 1953, the rise during the preceding 12 months having been 4.5 per cent (from October 1952's 118.5). Over the same period, fuel prices rose 5.6 per cent and prices of all other materials and supplies increased 3.8 per cent.

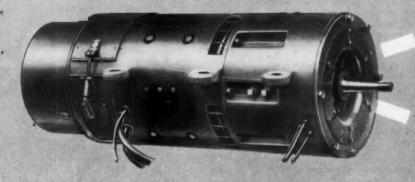
The charge-out-price index and the index of wage rates are annual figures on the basis of 1947-49 as 100. The former, the bureau explained, "corresponds in point of time to the con-



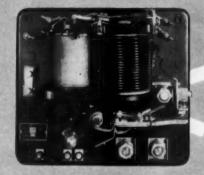
FOR TRAVEL PROMOTION, the Union Pacific has been awarded first place among common carriers by the Midwest Travel Writers' Association. David J. Phillips (left), a member of the road's public relations department, received the award plaque from M.T.W.A. President Frank Cipriani, travel editor of the Chicago Tribune. The judges considered quality of unsolicited pictures and stories; originality; and willingness to service special picture and story requests.

GENEMOTOR EQUIPMENT

An Unsurpassed Power Plant for Modern Passenger Cars...







COMBINING...

CONSTANT CURRENT LIMIT REGULATION... lengthens
battery life... provides full genemotor output at low speeds for adequate battery charging

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DEPENDABILITY . . . engineered to meet all exacting operating conditions

SIMPLICITY OF MAINTENANCE... uncomplicated automatic "Safety"

control equipment...plus a "Safety" genemotor, precision manufactured for long life...a combination that reduces maintenance costs to a minimum

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SAFETY COMPANY PRODUCTS INCLUDE: Air-conditioning Equipment o Generators o Generators o Regulators o Blower Units
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sumption of fuel and materials and the charges to operating expenses.

The figures show that, from 1939 to 1953, charge-out prices rose 134.6 per cent while wage rates rose 154 per cent. The composite price and wage index increased 148.4 per cent. In the post-war period as a whole (1945 to 1953), charge-out prices advanced 76 per cent; wage rates, 101.5 per cent; and the two combined, 94.2 per cent.

Labor & Wages

President Names Three To Express Wage Board

Fred W. Messmore of Lincoln, Neb., William E. Grady of New York, and G. Allen Dash of Philadelphia, Pa., comprise the emergency board which will investigate the wage dispute between the Railway Express Agency and its employees who are represented by the Brotherhood of Railway Clerks.

President Eisenhower created the board by executive order dated December 16. (Railway Age, December 28, 1953, page 12.) The board was scheduled to begin hearings at Chicago

last week.

Organizations

Executive Conferences At Columbia University

"Live questions" in transportation and traffic will be discussed for executives of both carriers and using concerns in a series of six conferences to be held in the Butler Room of the Columbia University Club, 4 West 43rd street, New York City, under sponsorship of the Graduate School of Business of Columbia University. Conferences are scheduled for the second Wednesday evening of each month, February 10 to July 14, inclusive. The group will be limited in size and confined to top and middle management levels of carrier and industry traffic functions-male only,

The registration fee of \$100 for the entire series will include dinner.

Participants in the discussions include, among railway officers, Arthur Genet, vice-president, Chesapeake & Ohio; Arthur E. Baylis, vice-president, New York Central; P. M. Shoemaker, president, Lackawanna; Henry F McCarthy, vice-president, Seatrain Lines, Inc.; and Harry W. Vou Willer, vice-president, Erie. Shipper partici-pants include Arthur C. Schier, vice-president, General Foods Corporation; C. H. Beard, general traffic manager,

CALENDAR FIRM'S CALENDAR FEATURES RAILROADS

For its own 1954 institutional advertising, the St. Paul, Minn., calendar manufacturing firm of Brown & Bigelow pays tribute to American railroads and the vital part they have played in the nation's economic development.

The company has begun national distribution of 200,000 full color calendars featuring a special authentically detailed oil painting, "Iron Horse," an illustration of an early American train of the 1865-1880 era. This calendar, called the house hanger, is an annual year end remembrance produced by Brown & Bigelow. It is not sold, but is distributed to customers, to business leaders throughout the country, and to public figures.

In addition to the main illustration, painted by Paul Detlefsen, each monthly calendar pad features a small picture of an even earlier loco-motive—the "Best Friend," "DeWitt Clinton," "John Bull," and others.

Union Carbide & Carbon Corp.; and Donald G. Ward, director of transportation, Mathieson Chemical Corporation. Howard G. Freas, member of the Interstate Commerce Commission. and C. A. Church, engineer, technical service, Locomotive & Car Equipment Department, General Electric Company, also will appear, as will representatives from other types of carriers.

Ernest W. Williams, Jr., associate professor of transportation, Graduate School of Business. Columbia University, New York 27. N. Y. is director of the conferences.

Perry M. Shoemaker, president of the Delaware, Lackawanna & Western. will be guest speaker at a joint luncheon session to be held in connection with the Mid-West Shippers Advisory Board meeting in Chicago January 21. The Traffic Club of Chicago is also sponsoring the luncheon session at which Mr. Shoemaker is to speak.

The annual meeting of the Western Association of Railway Tax Commissioners will be held February 9, in the Palmer House, Chicago.

"Outlook for the Railroads" will be the topic for one of the January 28 forum sessions which will feature a convention of the National Federation of Financial Analysts Societies to be held at the Commodore Hotel, New York, January 28-29. Pierre R. Bretey, of Baker, Weeks & Co., will be chairman of the rail

Thomas E. Dehoney, eastern perishable freight agent of the Santa Fe, is the newly elected president of the Perishable Freight Agents Associa-tion of New York. William J. Van Tassell, of the Pennsylvania, is vicepresident, and Thomas J. Cullen, Texas & Pacific, secretary.

Cecil Gwin, general agent, Norfolk & Western, has been elected president for 1954 of the Knoxville (Tenn.) Traffic & Transportation Club. Harold Hotchkiss, chief clerk, N&W, is secretary-treasurer.

Donald D. Heydlauff, general man-ager of Smyth Van & Storage, has been elected president of the Transportation Club of Seattle. Elected to serve with him were: Vice-presidents —Marshall O. Culton, general agent, Monon, and Clemens A. Bursett, im-port agent, American Mail Line; treasurer—Alfred E. Bourke, general freight agent, Puget Sound Freight Lines; and secretary—Herbert J. Dobb, retired general manager, Schwabacher Brothers, Inc.

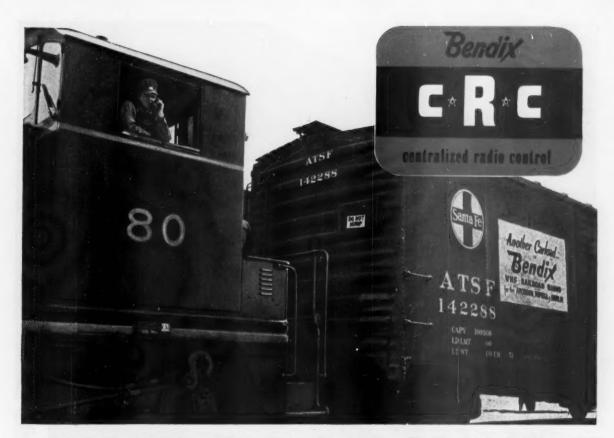
L. D. Cary, of the Nashville, Chattanooga & St. Louis, has been elected president of the Chicago Passenger Club. Other officers are: Vice-presidents-George Young, Baltimore & Ohio, and Ralph Abbas, Happiness Tours; and secretary-treasurer-Willard Throop, Pennsylvania.

Elected as president of the Rail-road General Agents Association of Portland, Ore., is G. O. Rundquist, general agent of the Canadian National. Other officers are: Vice-president—L. R. Hahn, general agent. Missouri-Kansas-Texas, and secretary-treasurer—F. V. Schlaf, traffic man-ager, Portland Traction Company.

Representatives of rail and motor carriers have been invited to attend the convention of the National Association of Frozen Food Packers at the Hotel Commodore, New York, January 31 through February 3, to discuss progress in development and adoption of suitable equipment to protect frozen food in transit. Those wishing to attend are asked to write the National Frozen Food Convention Committee, 1415 K street, Washington 5.

The next meeting of the Southern Association of Car Service Officers will be held in the Piedmont Hotel. Atlanta, January 27-28.

The Signal Section of the Association of American Railroads has elected the following officers for 1954: Chairman-W. N. Hartman, superintendent telegraph and signals, Chesapeake & Ohio; first vice-chairman-T. W. Hays, general signal engineer. Union Pacific; and second vice-chairman-E. N. Fox, engineer signals and telegraph, Boston & Maine, R. C. Steele, engineer of signals, Canadian Pacific, and V. O. Smeltzer, assistant (Continued on page 242)



ANOTHER CARLOAD OF BENDIX RADIO FOR THE SANTA FE!

Pioneers in railroad radio . . . both the Santa Fe and Bendix can remember when 2-way radio was bought one unit at a time!

But just look at this latest bill of lading from Bendix to the Santa Fe, dated September 9th.

A total of 205 communication sets!

For caboose installation 78 s	sets.
For locomotives 83 s	sets.
For base stations 6 s	sets.
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Bendix Railroad Radio is and has been an integral part of Santa Fe's progressive thinking . . . "America's New Railroad" . . . "progress that pays its own way."

Write today for the new booklet that gives complete information about Bendix CRC, the great advance in Centralized Radio Control.

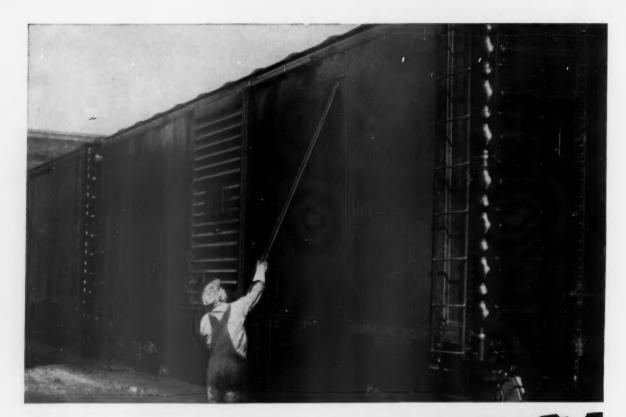
BENDIX* RADIO

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In a single application the Glidden Hot Spray System gives two-coat protection. It nearly doubles freight car finishing job capacity and at the same time reduces painting costs.

This new Hot Spray System requires less material and cuts down considerably on wasted over-spray. In addition, it insures more uniform coverage, longer life and a better all-around job.

THE GLIDDEN COMPANY

RAILWAY FINISHES DIVISION
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In Canada: The Glidden Company, Ltd., Toronto Glidden Hot Spray synthetic freight car enamels have been thoroughly tested and are now in use on the rolling stock of the nation's leading railroads.

For complete information, write: The Glidden Company, Railway Finishes Division, Department RA-154, 11001 Madison Avenue, Cleveland 2, Ohio. In Canada, The Glidden Company, Ltd., Toronto.



REASONS WHY IT PAYS TO SPECIFY ALCOLID the lifetime journal box lid



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Why take the "hard way"?

when you can have:



Special Heat-Treated Alloy-Iron friction casting having 35 inches of friction-bearing surface. easy to Assemble



Spring-steel wear plate securely welded or bolted to the column.

easy to Dismantle



Friction-casting-supporting side-spring having a minimum 3/4" initial compression. easy to Service!

BARBER STABILIZED TRUCKS



Aside from the small number of parts used, this easy handling is due to the fact that Barber Stabilizer parts are freed when the bolster is raised off the springs.

Easy-Riding is another characteristic of Barber Stabilized Trucks, lessening the possibility of damage to car structure and lading.

More than 330,000 car sets of Barber Stabilized Trucks have been specified up to this time.

Mighty easy Riding.



STANDA

CAR TRUCK COMPANY

12 SOUTH MICHIGAN AV

Barber Side Springs carry part of the load,
thus increasing bolster spring capacity and reducing net cost. 458-RR

MORE NET TON MILES



WITH

Self-locking nut for use with all sizes of common nuts.



M-F

Self-locking nut—used alone. Most economical for small bolts.



LOCK NUTS

A standard nut with locking threads. For all sizes.

Years of service prove that the M-F lock nut gives you more net ton miles per car because it cuts shopping time, keeps equipment rolling!

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In Canada: THE HOLDEN CO., LTD., MONTREAL

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ROLLED STEEL WHEELS
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The idea for this cartoon, drawn by Mr. Hungarford, won a prize for

Mrs. T. W. SELLHOUSE in the Edgewater Carteon idea Centest, held during the R.S.M.A. Convention at Allentic City in June 1982.



THIS KERSHAW BALLAST REGULATOR WILL GIVE YOU THIS

FOR ONLY \$20 TO \$40 PER MILE PER YEAR

 MAKE US PROVE IT WITH A FREE DEMONSTRATION ON YOUR RAIL-ROAD



Why don't you give your ballast shoulder the finely manicured look of the track shown above? It can be done, easily and inexpensively, with the Kershaw Ballast Regulator and Scarifier.

AND AT A COST OF ONLY FROM \$20 TO \$40 PER MILE, PER YEAR!

Here's why:

The machine will reclaim 50 to 100 cubic yards

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It will periodically rework the ballast shoulder on 200 miles of track yearly!

For only \$20 to \$40 per mile, per year, shoulders may be scarified, deweeded, regulated and shaped, ballast reclaimed and drainage provided! You don't have to bother with chemicals for weed control.

All you need is the Ker-

shaw Ballast Regulator and Sacrifier. It is operated by two men and maintains a 200-mile section of track at a rate of two to three miles per day. It may be removed from the track at any motor car set-off or road crossing.

In addition to the Kershaw Ballast Regulator, Scarifier and Plow, Kershaw Manufacturing Co. also constructs such top-flight equipment as its Kershaw Kribber, Utility Derrick, Track Crane, Mocar Crane, Hydraulic Jack, Jackall, Tie Replacer, Track Broom and others.



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THE WEB OF
TERMINAL DELAYS

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SAVE
AIR and TIME
in clearing cars
through the yards

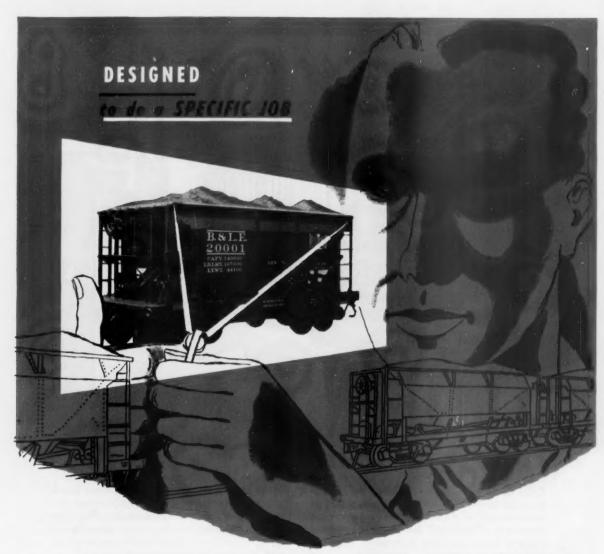


THE BRAKE CYLINDER RELEASE VALVE

on freight cars

The New York Air Brake Company

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70-TON ORE CAR, BUILT FOR LONG HAUL SERVICE

Building a freight car entails more than riveting together so many pieces of plate steel. Many hours of creative thinking are needed to engineer a car that will perform a given task successfully and with a minimum of maintenance. The ore car pictured here is one of those cars. For example, 100 B.&L.E. ore cars will carry 8300 net tons of iron ore and take up only 2717 feet of track. One hundred 70-ton, all-purpose hoppers will carry 8000 net tons and occupy 4417

feet of track, nearly 40% less space for the short coupled "Jennies". This is a decided advantage, especially in steel mill yards where track space is limited. Lading in this redesigned car can be discharged either through the drop bottom door arrangement or by a car dumper. It will pay you to investigate the engineering service offered by the Greenville Steel Car Company . . , we have had forty years' experience in serving the transportation industry. Write for further information today.

special features

- increased cubic capacity -

- trainmen
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- from either side

GREENVILLE STEEL CAR COMPANY

SUBSIDIARY OF PITTSBURGH FORGINGS COMPANY



PENNSYLVANIA



Once again Hunt-Spiller combines the advantages of long-wearing Gun Iron with a design advancement in diesel locomotive parts . . . this time in a "package" unit of newly-designed cylinder liners complete with water manifold and connections.

Here is a simple modification of the E.M.D. cooling system which can be handled in railroad shops with minimum expense. The liners themselves offer design features which substantially reduce both operating and maintenance costs. As can be noted in the cut-away illustration at the right, there is no possibility of lower water seal leaks with resulting pollution of lubricating oil. Running repair time to replace the usual

lower seals is eliminated, and cylinder heads can be removed when necessary without disturbing any lower sealing assembly The large diameter manifold insures equal water flow at all cylinder liners. Flexible Dresser couplings with armored gaskets are used.

These Gun Iron conversion liners have been thoroughly tested and are now being used by leading railroads. We'll be glad to supply you with full details

These two books tell the story of Hunt-Spiller's products and facilities. Write for your copies today . . . no obligation, of course.





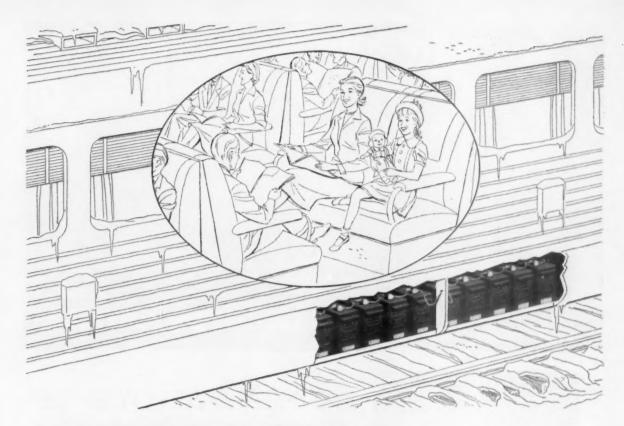
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Average Battery Life 23 Years Average Winter Temperature 20° Below

Frigid Winter Temperatures averaging 20 below—frequently 40 below and sometimes 55 below—do not hamper the Ontario Northland Railway in providing modern passenger service through the land of the fur traders as far north as Moosonee on James Bay.

Dependable Battery Performance has materially contributed to the successful operation of this road's passenger equipment under such adverse conditions—aided only by insulated, snowtight battery compartments and positive generator drives.

23 Years is the average life of Edison batteries used by this road; two sets are in their 37th year of service. Then too, Edison batteries that

have completed normal service life are utilized for many extra years of service in baggage and combination cars.

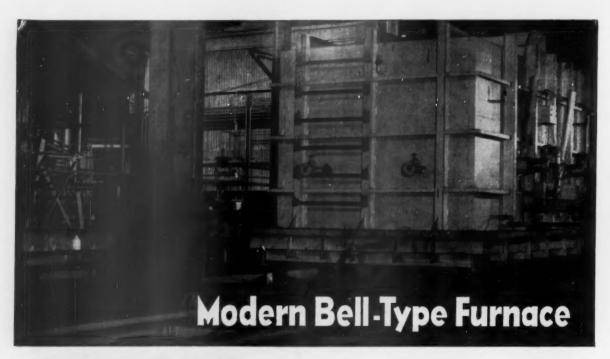
Regardless of Conditions, Edisons are the most dependable batteries you can install. Their extraordinary "long life" means lowest over-all cost. They can safely be kept in a high state of charge on the road, thus reducing the need for yard-charging. They successfully withstand the overcharging and overdischarging incidental to railway-car service. Complete facts on Edison railroad batteries are available in Bulletin SB 3802. Write for your copy and the name of your nearest Edison field engineer today. Edison Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, N. J.



Most Dependable Power —
Lowest Over-all Cost
. . . you get both with an EDISON



EDISON ALSO MAKES THE FAMOUS "V. P." VOICEWRITER AND THE TELEVOICE SYSTEM





UP TO 20% MORE CAPACITY

FROM YOUR AIR CONDITIONING UNITS

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WAUKESHA
EVAPORATIVE SUB-COOLER
to AC UNITS operating
with Air Condensers only

For use with mechanical refrigeration or cooling systems. Increases and insures maximum effectiveness of refrigerating condensing units even in the hottest weather. Automatic in operation, responding to cooling demands. Compact. Rugged. Efficient. Accessible.

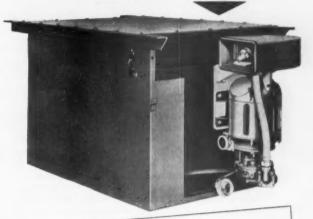


Motor-Pump-Fan Unit swings out on pivot hinges for easy servicing.

What it will do!

- Increase capacity from one to two tons.
- 2 Hold that capacity up to 120° Ambient.
- Revitalize your old units.
- Reduce head pressures.
- 5 Use less power.
- 6 Add life to compressor.
- Reduce load on motor and generator.
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- Reduce air conditioning failures.
- ncrease passenger comfort.

Act today to meet those high temperatures of 1954



Easy to install • Takes only 30 inches of under-car space • Benefits will liquidate investment in one year • Stainless steel construction insures long life.

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RAILWAY DIVISION

WAUKESHA MOTOR COMPANY

WAUKESHA, WISCONSIN

Largest Builders of mobile engine-driven Refrigeration and Generator Equipment

Tough residue

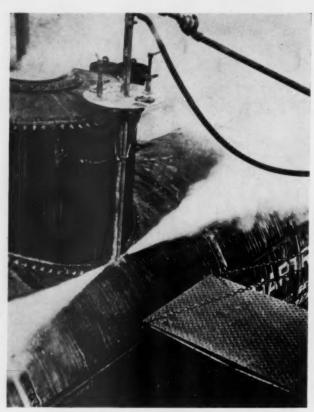
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tank car interior

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Fogging Unit



This is the sort of cleaning action that goes on inside your tank care

Another road finds Oakite's fast, easy, "mechanical" way to remove tank car soil saves time and work . . . speeds turnaround



Confined working space makes cleaning of tank car interiors a difficult job, especially when tough residues must be removed. Such was the case with this railroad. One of its tank car interiors was coated with a heavy, tenacious deposit. To complicate things further, the tanker was needed in a great rush.

The Oakite Man answered the rush call and found the situation ideal for demonstrating the Oakite Fogging Unit. He inserted the Unit into tank car dome. Steam and Oakite Composition No. 24 were fed to Units opposing nozzles. A detergent-laden steam fog blanketed the soil. Quickly the soil melted and rolled to tank car bottom. The condensate was dumped, and car rinsed with steam and water mixture until the drainage came out clean. Car was then finally rinsed and cooled with air and water mixture, and air dried.

Inspected, the car was found completely clean and was quickly approved by the new shipper. In only a few hours, the Oakite Fogging Unit and specialized Oakite material had accomplished a seemingly impossible rush job... and done away with the costly, laborious manual effort formerly required.

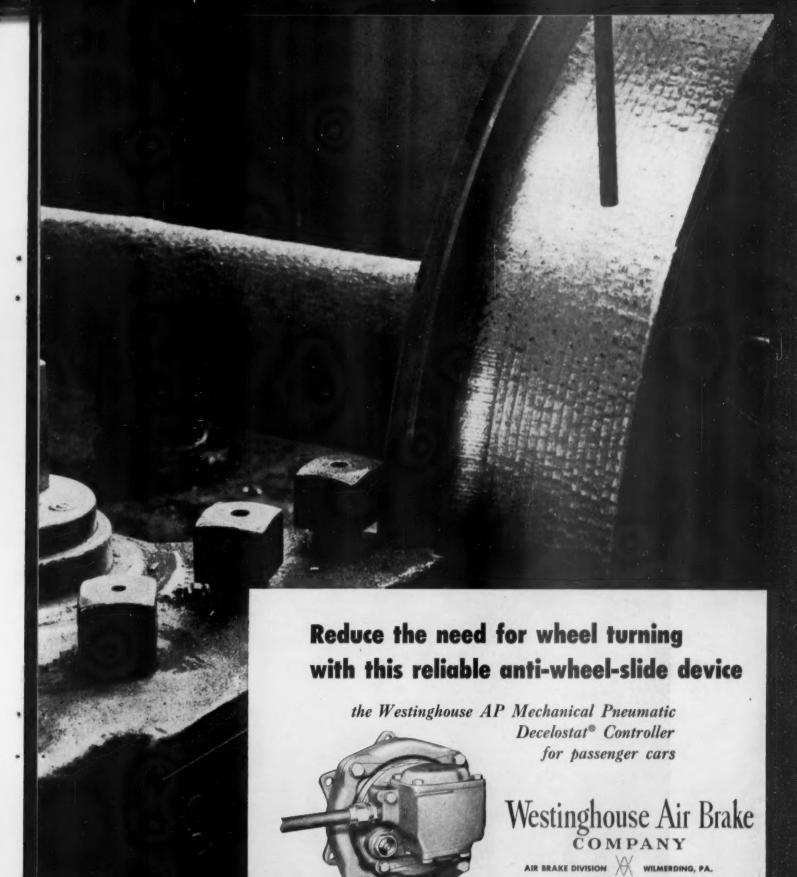
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Phenomenal expansion of Western industry owes much to the great Western network of railroads—vital carriers of raw materials and finished products that serve the rapidly growing economy of our nation. Ever alert to the demands of this great industrial empire... leaders of Western railroads have met the challenge by adequately providing modern and efficient transportation.





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The IMPROVED FAIR, strong and dependable, has proved through the years that it is The Anchor that takes the croop out of crooping.

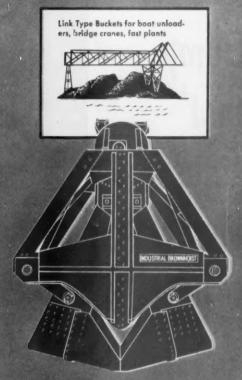


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Brownholet Buckets are designed for specific jobs and especially engineered to meet the taughest materials handling requirements. They take deep, full capacity bites that move more materials per lift, thus making possible considerable savings in man-hours and production time. They are built for endurance and dependability, the same qualities that have accounted for Brownhoist leadership in the bulk materials handling field for more than three quarters of a century. Railroads, steel mills and dack operators who are loading and unloading coal, are, slag or other bulk materials will find it pays to discuss their requirements with Brownhoist engineers.

BROWNHOIST builds better cranes

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Bump that assures positive results

When fire strikes, seconds count...your fire extinguishers must be the right type and function properly from the very start...failure means serious losses.

The growing popularity of the highly effective powdered dry chemical fire extinguishing agent may be hampered by a drawback...settling or packing can occur after a lapse of time. However, with C-O-TWO Dry Chemical Type Fire Extinguishers there's no chance of this happening.

The exclusive inverting and bumping design of C-O-TWO Dry Chemical Type Fire Extinguishers provides mechanical breakage of the dry chemical by shifting its position in the cylinder. This outstanding mechanical breakage, plus continuous inert gas pressured agitation or fluffing of the skillfully blended free flowing dry chemical, guarantee lasting, foolproof fire protection.

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How a little thing like this pointed the way to freight car progress







Fifty years ago, boxcars were almost completely wooden-roofs, sides, ends, even underframes. Cars like that needed frequent repair—and still had many infirmities

Through the years, part after part was converted to steel. Railroad men made as much progress as possible, until cars became the almost-all-steel units seen on the rails today.



Each conversion to steel added strength and For transit, much finished freight must be secured with blocks nailed into place. So it's



Railroad men have long wanted to apply to floors the recognized advantages of steel. Now NAILABLE STEEL FLOORING provides these advantages, along with extras of its own.

durability, reduced downtime, saved main-tenance. The last important non-steel part was the floor, and for good reason.



Showing up in Car Department plans today are more and more of these floors which progress the freight car's evolution to steel. They're used by over 50 railroads.



the nailability of wood that has kept it in use as car flooring material.

All the abuse of normal use just rolls off N-5-F. And like no other flooring, N-5-F, welded to the frame, actually adds strength at critical points of the car structure.



Careful analysis of its advantages will establish how NAILABLE STEEL FLOORING in freight cars will soon pay for itself by reducing car operating costs in the future.



N-S-F is made of low alloy N-A-X HIGH-TENSILE steel-remarkably strong, corrosionresistant—formed into channels, and welded together to form a unique nailing groove. Nail is clinched in a tight grip of steel, yet can be readily removed.

COMPLETE engineering and cost data available from Great Lakes Steel Corporation, Steel Floor Division, Ecorse, Detroit 29, Michigan. Sales representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, Montreal and New York,

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Fast materials handling with Dependable American DiesELectric

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Such is Fairmont's reputation in the field of maintenance transportation that the Fairmont name has become all but synonymous with railway motor cars. This reputation has, of course, come from many things. It has come, first of all, from consistently fine engineering and careful craftsmanship. It has come from comprehensive field-testing—and from unduplicated practical experience in the requirements of the nation's railroads. It has come, too, from Fairmont's world-famous qualities of dependability and economy and long life. And it has come—in perhaps even larger measure—from the unusual variety and scope of Fairmont vehicles. Pictured on this page are representa-

tive models from the full line of Fairmont motor cars—covering every conceivable responsibility of maintenance transportation. Each, of course, is designed for a particular assignment and purpose—and yet, all share a common standard of excellence in design, in construction and in service. They are positive proof that in the field of maintenance transportation—as in every other phase of railway maintenance—Fairmont has the ideal answer for every need. For further information on any Fairmont product pictured here—or on any other piece of Fairmont equipment in which you are interested—your inquiry is sincerely invited. We will be delighted to serve you at any time.

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MANUFACTURERS OF INSPECTION, SECTION AND GANG CARS, HY-RAIL CARS, MOTOR CAR ENGINES, PUSH CARS AND TRAILERS, WHEELS, AXLES AND BEARINGS, BALLAST MAINTENANCE CARS, DERRICK CARS, OIL SPRAY CARS, GROUTING OUTFITS, TIE RENEWAL EQUIPMENT, ASIL RENEWAL EQUIPMENT, WEED CONTROL EQUIPMENT



M9 SERIES G One to Two Man Inspection Car features an efficient raller bearing engine, enclosed housing and adjustable lift handles. Only 540 lbs. in weight, it offers high standards of performance, safety and dependability.



M19 SERIES AA One to Four Man Inspection Car offers a new two-cylinder Fairmont engine, demountable wheels and four-wheel braking. Soundly engineered and soundly bullt, this vehicle provides a load capacity of 750 lbs.



M19 SERIES F One to Four Man Inspection car employs a 5- to 8-horsepower roller bearing engine, a new engine stabilizer and four-wheel braking. Uke all Fairmont products, it offers maximum dependability and economy of operation.



MR19 SERIES A One to Four Man Inspection Car provides two-way drive, four wheel braking, enclosed housing and a 5- to 8-horsepower engine. Unusual speed and maneuverability are among its performance characteristics.



M14 SERIES H Light Section Car combines the strength and power to carry six men with the lightness and ease of handling to transport only two. Features include a steel frame, demountable wheels and a 5- to 8-horispower engine.



A3 SERIES D Gang Car offers unusual variatility at remarkably low cost and maintenance. Featuring a 17-horsepower engine, a four-speed transmission, four-wheel braking and an unusually strong body, it is also adaptable as a heavy-duty section car.



A7 SERIES B Heavy-duty Gang Car features a dependable V-B engine, fourspeed transmission and a heavy-duty directional gear. Can be fitted with fourwheel chain and spracked drive. Particularly suitable for heavy-duty towing.



How many times a day does the flagman on one of your trains go behind the last car to warn oncoming trains of a delay caused by a hotbox? Probably too many times . . . resulting in needless expense and delayed deliveries.

Working together with railroad operating executives,

Engineers have developed the BESF FREIGHTER

Roller Bearing for freight cars. Service

tests prove they eliminate the hot box problem. They're called FREISHTER Roller Bearings because they improve rail freight movement in these 8 important ways:

Maximum safety — eliminates hot box problem.

2nd of EIGHT Better riding qualities—less lading damage.

3rd of EIGHT Minimum wear of wheels and truck parts.

4th of EIGHT Low lubricating cost.

5th of EIGHT Long bearing life.

6th of EIGHT Easy installation.
No adjustments at assembly.

7th of EIGHT Adaptability to proposed AAR standards.

Best overall economy.

When you're ready to equip your freight cars with anti-friction bearings for more return on your investment, remember one important name— BASSF FREIGHTER Roller Bearings—made by the manufacturer with the world's broadest experience in the application of anti-friction bearings to passenger and freight cars, and motive power.

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Modern & STream Lined

The Minneapolis & St. Louis in 1953 is a completely modern Railway, staffed and equipped for its specialized job:

Fast Freight Service in the Great Midwest

Under the present management, the M. & St. L. has been rebuilt, physically and financially, in the past 18 years.

SOME FACTS ABOUT THE M. & ST. L.

Locomotives: all the new and more efficient Diesels, 73 units.

Freight Cars: 4,000, nearly all new since 1944.

New Depots, Shops and Bridges: scores of old structures replaced.

Major Projects: new general office in Minneapolis and three Diesel service buildings.

Yards and Shops: rebuilt and modernized at Minneapolis, Marshalltown and other terminals.

All Improvements: paid for or being paid for from earnings.

The M. & St. L. is one of the few railroads without bonded debt. Only capital is 600,000 shares of common stock.

Since 1935, operating revenue has tripled, totaling \$22,901,000 in 1952.

Employes number about 2,800. Total payroll, \$11,-403,000 in 1952, nearly three times that of 1935.

Taxes totaled \$2,861,000 in 1952, paid to federal, state and local governments, equal to \$4.77 per share of stock.

The M. & St. L. operates 1,397 miles of main track: 399 in Minnesota; 155 in South Dakota; 753 in Iowa and 89 in Illinois. Serves 225 cities and towns.

Constant program of industrial development has located several hundred new industries on M. & St. L. lines, creating additional freight traffic.

Traffic department, strongly staffed and operating 36 offices throughout the U. S., works aggressively to secure freight, including "bridge line" traffic from connecting roads as well as shipments to and from points on line.

THE GOAL OF THE M. & ST. L.

To provide ever-better Freight Service to the Communities it serves, to Agriculture, Business and Industry and to Connecting Railroads; thus contributing to Progress and Prosperity of its Midwest Territory, expanding its own Traffic and Revenues and making possible the payment of Liberal Dividends to Owners of its Stock.



The MINNEAPOLIS & ST. LOUIS Railway

Modern & STream Lined Freight Service





Ore unloading capacity of Canton pier doubled by new G-E-equipped facilities

A new unloading tower and a giant new conveying, weighing, and car-loading system will enable the Canton Railroad Company to discharge 3000 tons of ore per hour (double the former capacity) at its Baltimore, Md., pier.

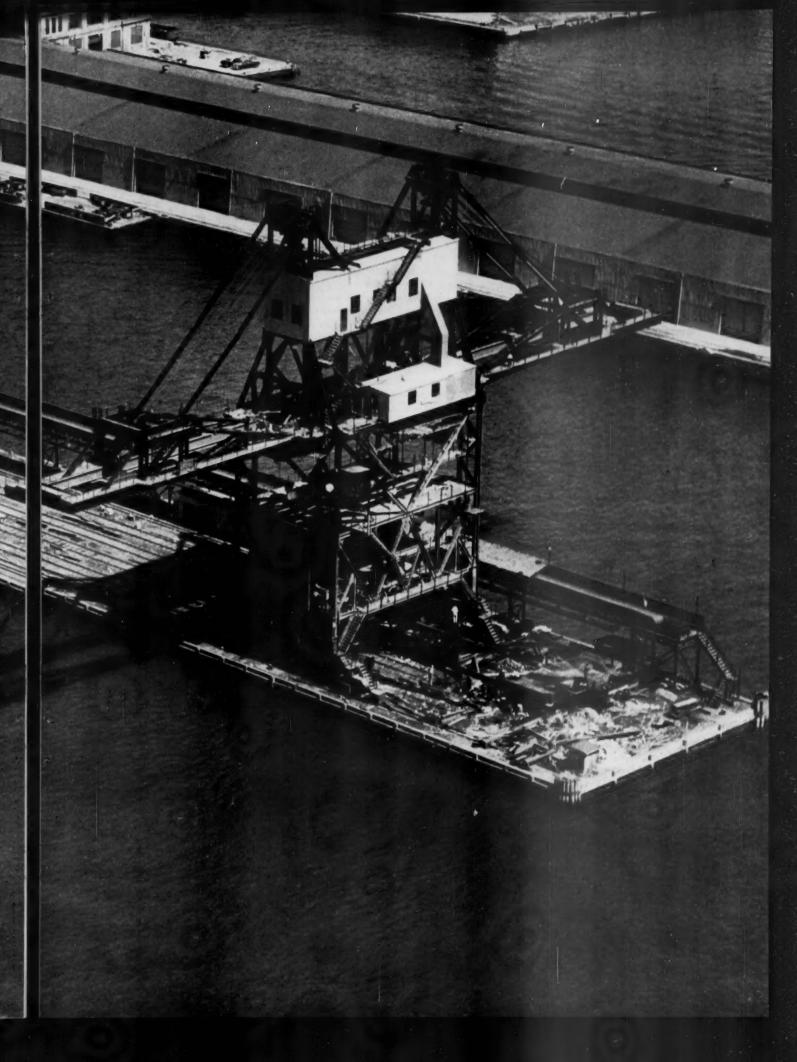
The unloader, designed and built by Heyl and Patterson and completely equipped with G-E generators, motors, and adjustable voltage control, has a capacity of 1900 tons per hour during "free digging." Like the two older cranes, the new tower can discharge multiple-lot cargoes directly into railroad cars or single-lot cargoes onto the 1604-ft long high-line conveyor. The conveyor system, designed by Hewitt-Robins, Inc., uses 18 G-E motors and matching G-E control.

There is a reliable, economical G-E motor and matching control for every railroad application. Contact your nearest G-E Apparatus Sales representative for details. General Electric Company, Schenectady 5, N. Y.

You can put your confidence in_



GENERAL ELECTRIC



Organizations

(Continued from page 214) signal engineer, system, Santa Fe, have been elected members of the Committee of Direction for terms expiring December 1957.

The Traffic Club of Kansas City has elected as president Ben A. Ever-ett, assistant general freight agent, Santa Fe, and as vice-presidents Wilbur G. Brown, director of traffic, Hart-Bartlett-Sturtevant Company, and Lee H. Poettgen, division freight agent, Gulf, Mobile & Ohio.

Supply Trade

Harry M. Reed, central district manager of the Gerrard Steel Strapping division of the United States Steel Corporation, at Chicago, has been named vice-president-sales at that point, to succeed W. B. Renois, who has resigned. Mr. Reed has been replaced by Richard G. Patterson, assistant manager-heavy duty products service section.

John W. Kelly, sales engineer for the Electric Storage Battery Company at Atlanta, has been appointed manager of the branch office at 100 Ashford Street, Boston.

Charles F. Wert, supervisor of signals on the Philadelphia division of the Reading, has joined the Union Switch & Signal Division of Westinghouse Air Brake Company, as a sales engineer at New York.

Charles W. Henricks has been appointed district manager at New York, succeeding Edward A. Warner, retired. A photograph of Mr. Henricks appeared in Railway Age February 2, 1953, when he was appointed assistant district manager at New York.

Clyde E. Roberts, assistant manager of sales of Republic Steel Corporation's Alloy Steel division, has been appointed manager of sales for that division, at Massillon, Ohio, succeeding Martin H. Schmid, retired.

John Gilchrist has been appointed managing director of Ex-Cell-O Corporation of Canada, a new subsidiary of Ex-Cell-O Corporation, Detroit, with a plant in London, Ont. Mr. Gilchrist was formerly president of a company manufacturing power

Formation of International Testing Service, a division of Jackson & Church Co., Saginaw, Mich., to provide engineering services to firms facing problems in testing, instrumen-

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*At these warehouses, there are Graybar Representatives who have special experience in handling railroad electrical requirements.

100,000 electrical items via are distributed GraybaR THROUGHOUT THE NATION . . Specific Spe

OFFICES AND WAREHOUSES IN OVER 110 PRINCIPAL CITIES

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PUBLIC ACCEPTANCE VERSUS GOOD LOOKING STATISTICS

"There is a substantial amount of freight and passenger revenue assignable to what one might describe as 'floating' traffic, which is suitable for either rail or road conveyance, and which will be won by the form of transport prepared to give the better service and more reasonable terms. If railways will only vitalize their traffic ideas, they can surely establish themselves well in this particular field, though this may be their last chance to do so, since, once tollsupported highways are allowed to become available on a national level, they will have largely lost their case. Shippers wonder at times whether operating records are not, in fact, reached at some expense and inconvenience to customer-service and are designed more for the shortsighted benefit of the railway itself. What shippers really want to know, is whether the railways are going to move their traffic safely and on regular and dependable schedules between dispatch and destination points or whether the alarmingly slow and unreliable transit times still obtaining on many routes are to continue." -L. K. Sillcox, honorary vice-chair-man, New York Air Brake Company. at the Harvard Graduate School of Business Administration, December 10.

tation, and related fields of research and development, has been announced by J. & C. President Clifford W. Stuart. Director of I.T.S. is Dr. Perry M. Banta; division manager is Homer W. Parker. Phases of engineering service available are consulting, spe-cial instrumentation, laboratory testing and investigations, development, process control, laboratory planning, calibration, analysis of data, instru-ment design, special installation and research.

John M. Harris and William O. Corfield have been appointed district sales managers for Ebeo Manufacturing Company, in charge of Oasis and Kelvinator water cooler and air drier sales in midwestern states.

John Brandenburg, sales manager for the American Manganese Steel division of American Brake Shoe Company, has been appointed vicepresident, sales, for that division, at Chicago. William E. Crocombe, Jr., district sales manager at St. Louis, has been promoted to central sales manager at Chicago Heights, Ill., and John H. Baker, sales engineer, succeeds Mr. Crocombe at St. Louis.

Vertner S. Kenerson is now representing Flexible Steel Lacing Company in the Carolinas, Virginia and east Tennessee, taking over part



Here are Just a Few of the Trend-Setting Features.

- Chrysler 65-bhp 6-cyl.
 Gas Engine
- Chrysler Gyrel Fluid Coupling
- Mobil-Matic Drive for smooth, positive power transmission through the MOBILIFT Oil-Immersed, Multiple-Disc Clutch and

Constant-Mesh Transmission — Two speeds forward, two reverse.

- One Lev-R-Matic Control for forward and reverse... just Push to go forward — Pull for reverse — NO CLUTCH PEDAL — NO GEARS TO SHIFT!
- MOBILIFT Full-Floating Drive Axle.
- ♦ Hydraulic Service Brakes.
- Combination Ball-Bearing Worm
 & Nut Type Steering.
- Easy to Get On and Off—no obstructions. Free access from left or right side.
- One-Piece Hood Raises for Easy Service Accessibility.

These—and many more—exclusive MOBILIFT features makes this new D-424 the lift truck for youl

Write today for complete details.



Wade H. Reichard, consulting engineer for General Railway Signal Company, has retired.

of the area formerly covered by Austin Webster, retired. Mr. Kenerson has

Joseph T. Ryerson & Son, Inc., has moved from its former location in Milwaukee to a new and larger plant at 500 South 88th street, which has approximately 170,000 sq. ft. of floor space and four times the capacity of the old plant.

Floyd O. Johnson, Jr., has been appointed railroad sales engineer of the Colorado Fuel & Iron Corp., railroad sales department. He was previously employed by the Pennsylvania in various capacities in the engineering and maintenance department, his latest assignment being main line assistant supervisor.

Orville Ingram has been appointed vice-president — sales of the Wine Railway Appliance Company with headquarters at Washington, D. C. He was formerly assistant to the president of that company. Mr. Ingram is also assistant to vice-president of the Unitcast Corporation.

OBITUARY

Walter B. Templeton, 81, founder and formerly chairman of the board of Templeton, Kenly & Co., died at Hinsdale, Ill., in December.

Equipment & Supplies

India Buys Locomotives And Cars With U.S. Aid

An agreement between the United States and India, signed recently in New Delhi, will provide 100 new locomotives and 5,000 new freight cars for India's railway system.

The Foreign Operations Administration has announced the U.S. will provide \$20,000,000 in "economic aid" for acquisition of the rolling stock (Railway Age, January 4, page 7). India will put up \$6,730,000 to pay transportation and assembly costs.

The new equipment will be purchased in the near future, and manufacturers from several Western countries are expected to bid for the contracts. The U.S. funds will be supplied before June 30.

India's railway system, with 34,123



lift height 108"

MOBILIFT CORPORATION

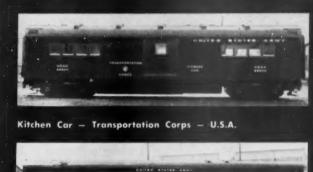
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2317 W. 18TH, CHICAGO • 790 PATTERSON ÁVE., E. RUTHERFORD, N. J.
2724 TAYLOR STREET, DALLAS • 2730 SAN PABLO AVENUE, BERKELEY
1113 SPRING STREET, N. W., ATLANTA

FOR 67 YEARS we've been building quality equipment for mass transportation:

- passenger and cabaose cars
- subway-elevated cars
- electric railway cars
- · trolley coaches







Ambulance Unit Car - Army Medical Service - U.S.A.



Reviews During 1953 our "60 humming acres" produced many cars, in which more thousands of passengers will continue to enjoy "5t. Louis Built" transportation comfort and safety for many years to come.

will continue to hum with the production of the most modern types of rolling stock, of highest quality in materials and workmanship. And, as in the past, our expert technical experience, competent research staff, and extensive shop facilities will be at the service of the American railroads.

Send us your inquiries



Modern Air-Conditioned Commuter Coach — New York Central

Page 2020

Bay-Window Type Cabaose Car — New York Central



Our "60 humming acres"

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Missouri V.S.A.

Detroit, Michigan 424 Book Building

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miles of track, is undergoing extensive rehabilitation under that country's Five Year Plan, according to F.O.A. Already the nation has placed orders for 769 locomotives and expects to order another 500 during the next two years.

A total of 32,293 new freight cars have been ordered, and 29,000 more probably will be purchased over the next 24 months.

Once the major rehabilitation work is completed, India's two locomotive plants will be able to provide replacements for worn-out equipment, F.O.A. said.

New Facilities

Missouri Pacific to Spend \$13 Million in 1954

Authority to spend \$13,794,470 for betterments and improvements in 1954 has been obtained by Missouri Pacific Lines properties from the U. S. District Court at St. Louis. Judge George H. Moore, in whose court the bankruptcy proceedings of the railroad are

being administered, approved the expenditures, which include \$7,403,875 that will be charged to the railroad's capital account.

A breakdown of the total expenditure showed that \$10,160,190 will go toward improvements on the Missouri Pacific; \$2,193,600 on the Gulf Coast Lines (Texas and Louisiana) and \$1,-440,680 on the International-Great Northern (Texas). P. J. Neff, chief executive officer, said the program provides for placement of 202 miles of new and heavier rail at a cost of nearly \$7 million. It also provides for replacement of bridges at various locations, additional signals both for train operation and at highway crossings, more facilities for diesel locomotive servicing, and extension of sidings to accommodate longer trains handled by diesel power.

Delaware & Hudson.—Has ordered from the General Railway Signal Company equipment for installation of traffic control systems at South Oneonta, N. Y., and between Ft. Edward, N. Y., and Whitehall.



THE "WHAT" Nearly forty steel mills, here and abroad, have purchased Differential Air Dump cars in capacities ranging from 30 to 60 cubic yards (level load).

THE "HOW" Massive air cylinders on both sides power the two-way, 50° dumping action. Wide spacing of fulcrums contributes to riding stability. No locking mechanism — no accidental dumping.

Down-folding doors chute the load a greater distance from track. Positive door return when car is righted. Overall ruggedness and simplicity of design mean minimum maintenance.

THE "WHY" It all adds up to a "higher ratio of payload to dead weight," superior performance— and ultimately to a prettier picture on the operating statement. That's "why" more and more steel mills have put Differential cars on their "earn-roll."

Other Differential Products: Locomotives, Mine Cars, Mine Supply Cars, Rock Larries, Mantrip Cars, Rotary Dumpers and other dumping devices, and Complete Haulage Systems.



SINCE 1915-PIONEERS IN HAULAGE EQUIPMENT

Financial

Expense Control Key To Earning Power

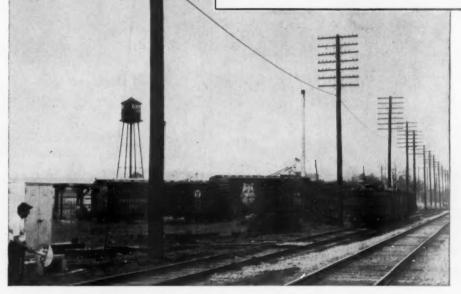
Earnings [net] of "between \$600 and \$700 million, dependent upon the severity of the business adjustment facing us" were forecast for the railroad industry by Pierre R. Bretey, investment analyst for the New York Stock Exchange firm of Baker, Weeks & Co., New York, in a luncheon address before the American Statistical Association at its annual national convention in Washington, D. C., December 29

Mr. Bretey estimated that, if the Federal Reserve Board index of industrial production declines to an average of 215 for 1954 (it averaged 235 in 1953, with a monthly peak of 243 in March), "railroad earnings are probably not likely to decline below \$700 million, compared with an estimated \$925 million in 1953." Were the F.R.B. index to decline to an average of 190, Mr. Bretey would still expect net income of Class I roads "to be maintained at around \$600 million"—the latter being nearly twice the current rate of payouts for dividends.

In spite of the fact that "historically, earnings have declined sharply when gross revenues contracted," the speaker took pains to point out that "a number of railroads achieved a flexible cost position during the 'rollover adjustment' of 1949, and developed better expense controls than exhibited by most industries." Beside this new favorable impact of budgeting, Mr. Bretey sees as long-term favorable factors: (1) De-

Here's Proof of Performance...

Railroad gets 25-30 years' life from its pressure-creosoted telephone poles



every one of the pressurecreosoted poles in this picture has been in service for more than 25 years. The poles carrythe L&N's privately - owned telephone line, paralleling the main line near the Louisville Terminal.

Coordinating its operations by means of 4,332½ track miles of privately-owned telephone line, the Louisville & Nashville Railroad relies almost entirely on pressure-creosoted poles. For good reason, too, because the service records of creosoted poles are outstanding, in spite of high annual temperatures and average amount of precipitation.

J. B. Hitt, Telephone Engineer, L & N Railroad, says:

"We are getting approximately 25 to 30 years of life from creosote

poles. A very small percentage of poles set in past 25 years have had to be replaced on account of being defective."

The L & N began using pressurecreosoted southern yellow pine poles back in 1924 and today has nearly 175,000 in service. Poles are pressure-creosoted in the railroad's own plant at Gautier, Mississippi.

For long-term protection of wood—poles, crossarms, crossties, posts, lumber and timber—against termites and decay due to fungi and

marine borers, Creosote has proved its effectiveness time and again. It combines the toxicity and permanence needed for effective protection.

Uniform quality is highly important, and you can be assured of it when U·S·S Creosote is used. It is the product of continuous processing in America's largest tar distillation plant. For complete information, contact our nearest Coal Chemical sales office or write to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

U·S·S CREOSOTE



UNITED STATES STEEL

cline in debt, with further improvement as equipment obligations run off and as equipment needs decline; fixed charges now absorb only four per cent of gross revenues, contrasted with from 15 to 18 per cent during the Thirties; (2) working funds equivalent to 3 1/3 years' fixed charge requirements, compared with but four months in the Thirties; and (3) the cumulative effect of capital expenditures of some \$9 billion since V-J Day, which have enabled the industry to maintain a high degree of earning power, despite increases in wage rates and wholesale prices far greater than freight rate increases.

Low Relative Values—In relation to current earnings of the railroads, their equity securities are selling "at abnormally low levels," according to the speaker. Most investment railroad equities are selling at only four to five times estimated 1953 earnings. "Absence of institutional interest in railroads has, nevertheless, not precluded" substantial advances in stock prices.

Not only has the Dow Jones average shown substantial advances in recent years, but potential profits made in holding individual stocks over the past decade have been even more striking, contends Mr. Bretey. For each \$100 invested in the year 1942, the investor,

if he held the following railroad stocks until the Dow Jones "high" of January 19, 1953, would have a market value, plus accrued dividends, of the following amounts:

Chicago & Northwester Chicago, Rock Island (New York Central	B. F	acif	ic .			. 34
New York, New Have	n 8	Ho	rtfo	rel		
Chicago, Milwaukee,	51.	Pau	8	P	acifi	c 52
Union Pacific			1			. 5
St. Louis-San Francisco						. 5
Erie						. 8
Seaboard Air Line						. 9
ehigh Valley						1,0
Baltimore & Ohio	* * *					. 1,0
Denver & Rio Grande	We	stern				1,2
Atlantic Coast Line						1,4
Southern Pacific						
Southern						1,6
Santa Fe						1,70
Ilinois Central						1,77
Northern Pacific						
Nickel Plate						. 2,81
Cansas City Southern					rer	4,4
Missouri-Kansas-Texas	(Pf	d.)				5,70
St. Louis Southwestern						
a. 1 (d. 1	0.0		. 1		. 1	

Since the "highs" of the individual railroad stocks did not necessarily coincide with the Dow Jones high, the maximum appreciation of individual issues may have been even higher.

WATCH

FOR THIS NAME PLATE AND BE SURE OF

"GENUINE"



Mink has a varied line of railroad specialties that are in keeping with the progressiveness of leading railroads.

- . WATER COOLERS
- . METAL STATIONARY
 - AND FOLDING LAVATORIES
 - COMBINATION LAVATORY
 AND TOILET UNITS
 - · LUGGAGE RACKS
 - . TOWEL RACKS
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- . DRY HOPPERS
- . DOOR CLOSERS
- . MIRRORS AND FRAMES
 - . MEDICINE CABINETS
 - . HEATER GUARDS

ETC.

Mink also is in a position to develop and manufacture any special products that may be necessary to meet your requirements.

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Securities

Dividend Declared

DETROIT & MACKINAC.-5% non-cumulative preferred, \$3, payable January 15 to holders of record January 4.

Security Price Averages

	Jan. 4	Prov. Week	Last Year	
Average price of 20 repre- sentative railway stocks	57.94	57.55	69.61	
Average price of 20 repre- sentative railway bonds	91.18	90.83	95.23	

Minneapolis & St. Louis.—Stock Dividend.—This road has applied to the I.C.C. for authority to issue 200,000 shares of no-par common stock which it would distribute as a stock dividend among shareholders. Each holder would receive one-third of a share of

NOVEMBER NET DOWN, ELEVEN MONTHS' UP

Estimated net income of Class I railroads for November 1953, released just as this issue of Railway Age was going to press, was \$60,000,000—over 30 per cent below November 1952's net income of \$87,000,000. For 1953's first 11 months, net was \$800,000,000 compared with \$717,000,000 in the comparable period of 1952.

Operating results for 11 months of 1953 and 1952 were as follows:

	1953	1952
	\$9,848,917,002	\$9,646,522,076
Operating expenses	1,162,856,463	7,341,809,527 1,164,820,228
Net railway ope		968,789,627
Net income at charges (est.)		717,000,000



Chicago & Eastern Illinois Railroad maintains fast freight service with help of . . .

Efficient diesel locomotives keep freight moving fast and sure on the Chicago & Eastern Illinois Railroad. Twenty-eight of these hard-working diesel units are kept in top running condition with Standard's Diesel Lubricating Fuels. These outstanding heavy-duty lubricants assure clean, protective lubrication that helps keep maintenance at a minimum and engine operating efficiency at a maximum.

On more than 70 railroads, STANDARD Diesel Lubricating Fuels provide safe, effective lubrication under severe conditions of diesel operation. Quality products and always dependable service make Standard the railroads' first choice. You can make use, too, of the services of a specially trained Standard Oil Railway Department representative. Put his practical experience to use on your lubricating problems. Standard Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD'S

Diesel Lubricating Fuels



STANDARD OIL COMPANY (Indiana)

new stock for each share now held. For purposes of capitalization, the new shares would be charged against "earned surplus — unappropriated," and would have assigned value of \$25 per share. This would capitalize \$5,000,000 of the earned surplus account. That account has accumulated \$10,-184,985 since the road came out of reorganization on December 1, 1943.

Railway Officers

ATLANTIC COAST LINE.—C. R. Lapeza, assistant to general manager,

has been appointed assistant to president at Wilmington, N.C.

BALTIMORE & OHIO.—Irvin R. Jones, captain of police, St. Louis division, has been appointed superintendent of the police department at Baltimore, succeeding Thomas L. Rowe, who has retired after 43 years with the B&O.

Karl J. Wagoner, assistant chief engineer, has been appointed chief engineer, with headquarters as before at Baltimore, succeeding Alfred C. Clarke, who retired December 31, after more than 38 years of continuous service with the B&O. Milton S. Norris, senior engineer, has been promoted to regional engineer, with headquarters as before at Pittsburgh, succeeding Edwin F. Wright, who replaces Mr. Wagoner as assistant chief engineer at Baltimore.

BESSEMER & LAKE ERIE.—
The office and positions of engineer motive power and assistant engineer motive power have been discontinued. The locomotive departments at various points will report direct to superintendent motive power and/or assistant superintendent motive power. S. B. Schenck, engineer motive power, has been appointed special engineer, reporting to superintendent motive power, and C. R. Rosenberg has been appointed assistant engineer, reporting to mechanical engineer, both at Greenville. Pa.

Ralph B. Krichbaum has been appointed industrial agent and James K. Piper has been named general agent, both at Pittsburgh. The positions of special representative and commercial agent at Pittsburgh have been discontinued.

BOSTON & MAINE.—Richard Jackson, general attorney, has been appointed general counsel at Boston, succeeding R. J. Fletcher, who has resigned to become general solicitor of the Railway Express Agency.

CANADIAN PACIFIC.—F. J. Fryer has been appointed assistant general superintendent transportation at Montreal. Mr. Fryer had been as-



F. J. Fryer

signed to special duties for the vicepresident of the Prairie region at Winnipeg since June 1953.

W. L. Wilson, acting superintendent at Winnipeg, has been appointed superintendent there.

Benedict Bouzan, assistant chief of the investigation department at Winnipeg, has been appointed chief of that department at Montreal, succeeding A. Hector Cadieux, who has retired after 40 years in railway police service.

As reported in Railway Age December 28, 1953, F. K. Hollyman has been appointed freight traffic manager at Toronto; T. Hooks succeeds him

WEIGHT FOR WEIGHT

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MULE-HIDE



MULE-HIDE ROOFS
NOT A SEASE
MELICON SEET

30 years of railroad use have proved it!

A Mule-Hide Cold Process Built-up Roof goes on easier and faster—is better—wears longer than any other built-up roof of equal weight. You see, Mule-Hide Cold Process Roofing is both saturated and coaled at the factory. This means precision coating—no variations in thickness—no need to hot mop roofs—and no "blistering" or checking.

Yes, a Mule-Hide Cold Process Roof is better and wears longer.



Write for free book containing complete specifications for laying Mule-Hide Cold Process Roofs

so easy to apply your own maintenance men can put it on.

THE LEHON COMPANY 4425 South Oakley Avenue, Chicago 9, Illinois

as assistant general freight traffic manager at Montreal. Mr. Hollyman joined the freight department of the CPR at Toronto in 1917 and became assistant general freight traffic manager at

F. K. Hollyman



T. Hooks

Montreal in 1950. V. R. Duncan, general freight agent at Vancouver, succeeds Mr. Hooks as assistant freight traffic manager there.

CENTRAL OF GEORGIA.—John B. Miller, commerce counsel, has been appointed to the newly created position of assistant general counsel, with headquarters as before at Savannah.

CHESAPEAKE & OHIO.—Garnett E. Johnson has been appointed assistant general passenger agent, rates and divisions, at Richmond, Va.

CHICAGO & NORTH WEST-ERN.—W. H. Huffman, assistant to chief engineer at Chicago, has been promoted to assistant engineer of maintenance at that point, succeeding F. W. Creedle, who has resigned. Named to succeed Mr. Huffman is C. E. Hise, office engineer there.

DENVER & RIO GRANDE WESTERN.—Lyttleton F. Wilson, assistant executive vice-president at Denver, retired December 31. After serving with the Louisville & Nashville, the Terminal Railroad Association of

St. Louis, the Pacific Electric, the Union Pacific and the Mexican International, successively, Mr. Wilson joined the Rio Grande in 1907 as secretary to assistant general manager at Denver. He was named assistant executive vice-president in 1951.

ERIE.—Arthur E. Hoffmann has been appointed assistant to general manager, Eastern district, at Jersey City, succeeding Clifford H. Ward, who will retire January 1, 1954, after 47 years of service.

FRISCO.—L. W. Menk, superintendent at Tulsa, Okla., has been named assistant general manager, Western district, at Springfield, Mo.

GREAT NORTHERN.—David R. Coleman has been appointed division storekeeper at Minneapolis Junction Store, succeeding E. E. Pike, who has retired after 35 years of service.

GULF, MOBILE & OHIO.—W. E. Barrett, assistant general freight agent, has been appointed assistant freight traffic manager, with head-quarters as before at St. Louis. R. J. Puff has been named assistant general freight agent at St. Louis. (Continued on page 252)



This bridge was NOT protected by the LIBBEY-ZONE Process

LIBBEY-ZONE

the process that cuts fire loss and weather deterioration

LIBBEY - ZONE protected structures resist weather deterioration and these installations provide years of efficient protection without attention or repair.

LIBBEY-ZONE instal-

lations resist fire damage from oil drippings, burning fuses cigarettes, etc.

LIBBEY - ZONE applications are made without traffic disrup-

plications are made without traffic disruption; require little time and no special equipment or trained personnel. LIBBEY-ZONE is the time-proved fire and weather resistant system

The picture shows some of the physical damage to a through-line bridge of a major railroad as it burned recently near Chicago. What the picture does not show, is the disruption of schedules and the cost of repair and replacement. If this bridge had been LIBBEY-ZONE Process treated, chances are, it would not have burned and would be standing today.

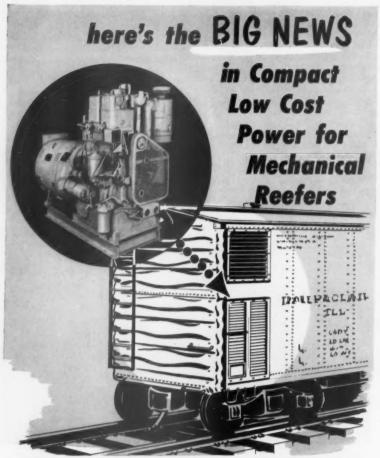
Easy-to-apply LIBBEY-ZONE HEAVY DUTY coating and gravel aggregate is the proved answer to effective fire prevention for wooden railway structures. The LIBBEY-ZONE Process can be applied directly from the drum, without pre-heating . . and the work is done by unskilled help. Important, too, test applications of the LIBBEY-ZONE Process made over ten years ago, show virtually no weathering effect after exposure to every imaginable type of weather.

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THE ZONE COMPANY

Rail Products Division, Box 789, Fort Worth 1, Texas



• Mechanical reefers are becoming one of the most important and dramatic developments in modern railroading. And as the key factor in providing dependable, low cost power for mechanical refrigeration systems—NORDBERG is furnishing Diesel generator sets that are "tailor-made" for this important service.

These NORDBERG Diesel generators are built in two basic sizes for mechanical reefers . . . a 15 KW unit for 10-ton systems—and a 25 KW unit for 15-ton systems. Here are some of the exclusive advantages you get with NORDBERG Diesel power:

- Extremely compact "in line" installation means more available space for cargo.
- Fully dependable conservative engine ratings, plus proved heavy duty construction assures easy starting, long life, with extremely low operating and maintenance costs.
- Simplicity of design no sensitive controls to require constant adjustment. Fast, easy maintenance.
- Backed by service and experience second to none . . . from the builder of America's largest line of heavy duty Diesels
 — from 10 to over 10,000 horsepower.



LACKAWANNA.—As reported in Railway Age December 28, 1953, William G. White has been appointed vice-president, operations, and Rowland L. Davis, Jr., has been named vice-president and general counsel, both at New York, Mr. White was born at San Francisco April 7, 1913, and attended the University of California and George Washington University (B.S. in C.E.). His first railroad service was as a student-employee on the Yosemite Valley at Merced, Cal. Mr. White entered Lackawanna service in



William G. White

June 1935 as yard clerk and student at Hoboken, N.J., and subsequently became supervisor freight claim prevention at Scranton, Pa.; freight trainmaster at Port Morris, N.J.; trainmaster at Buffalo, and superintendent, Buffalo division. After military service as major and lieutenant colonel in the Transportation Corps in England, France and Germany, he returned to Baffalo as superintendent, transferring to Hoboken in April 1946. He was promoted to general superintendent at



Rowland L. Davis, Jr.

New York January 1, 1949, and became general manager August 1, 1952.
Mr. Davis was born at Cortland, N.Y., August 3, 1907, and attended Amherst College and the University of North Carolina (B.A., 1929). He attended the law schools of the latter

university and of Cornell University, and was graduated from the law school of Yale University (LL.B., 1932). He was admitted to the bar of New York state in 1933, and was associated with the law firm of Sales, Flannery, Collin & Evans, Elmira, N.Y., prior to joining the law department of the Lackawanna June 15, 1939, as attorney. Mr. Davis was appointed assistant general attorney April 16, 1940; general attorney March 1, 1946; general solicitor May 16, 1947; and general counsel January 1, 1953.

H. C. Buffman has been appointed general agent at Los Angeles, succeeding H. E. Simpson, who has been transferred to Kansas City, to replace C. D. Santor, retired because of illness.

George W. Eastland, editor of the Chicago & North Western's employee magazine, the Newsliner, has been appointed editor of a new company magazine to be established by the Lackawanna, as reported elsewhere in this issue.

MILWAUKEE.—C. E. Barrett, district general car foreman at Ta-

"PIGGYBACK" RAILROADING

Will the Government help promote railroad "piggyback" operation—the hauling of loaded truck trailers on railroad flat cars? The "piggyback" idea has made considerable headway in the last year. It has won the enthusiastic support of the trainmen and engineers' brotherhoods. The trainmen have asked the Defense Transportation Administration to investigate the Trailer-on-Flat-Car (T.O.F.C.) service "with the ultimate purpose of declaring a public policy supporting it as vital to national defense."

Whatever the merits or demerits of this form of freight transportation, the loading of truck trailers on flat cars makes possible fast and efficient operation and a saving of truck equipment and of highways already overtaxed. At first flush it would seem that this picturesquely named "piggyback" operation would create additional rivalry between the railroads and their employees on one side and the trucking employers and the teamsters on the other. It is claimed, however, that the operation benefits both sides, that long hauls are expensive for truckers, calling for extra crews, whereas placing trailers on flat cars utilizes railroad equipment that would otherwise be idle.

Now and then an idea comes along that, it seems, may help revitalize transportation. "Piggyback" operation may be such an idea.

-From the New York Times

coma, Wash., has been appointed assistant superintendent car department at Milwaukee. Named to succeed him is W. J. Weatherall, who has been transferred from Savanna, Ill.

MISSOURI PACIFIC.—G. M. Strawhun, division engineer at Falls City, Neb., has been transferred to Poplar Bluff, Mo., to succeed C. E. Wood, who has been granted a leave of absence. C. B. Huffman, assistant division engineer at Falls City, replaces Mr. Strawhun, while L. L. Wallis, assistant engineer at St. Louis, succeeds Mr. Huffman. Named as division engineer at Wichita, Kan., is J. H. Greason, Jr., assistant division engineer at Kansas City, Mo., who replaces C. J. Jaeschke, who is on leave of absence. R. J. Kemper, assistant roadmaster at Poplar Bluff, has been named to succeed Mr. Greason.

NEW YORK CENTRAL.—James J. Frawley, vice-president at New York, has retired after 51 years of service.

Prentiss S. Hughel, superintendent communications of the Michigan Central at Detroit, has been appointed superintendent communications of Lines East, NYC, including the Boston & Albany, at Syracuse, N.Y. Glen L. Miller, assistant superintendent communications at Syracuse, has been appointed superintendent communica-

Lines West, at Cleveland. tions. Frederick A. Ahrend, assistant superintendent communications of the Big Four district, at Indianapolis, has been named superintendent of that district. Henry N. Wasserman, telephone and telegraph engineer at Detroit, has been appointed superintendent communications of the Michigan Central district at Detroit. Dale W. Shackley, telephone engineer at Boston, has been named superintendent communications of the Pittsburgh & Lake Erie at Pittsburgh. Leo J. Ritter, assistant communications engineer at Detroit, has been appointed communications engineer at Cleveland. Albert L. Taylor, assistant communications engineer, becomes communications engineer at Detroit. Robert J. Derr, assistant communications engineer at Syracuse, has been named communications engineer there. Paul J. Murphy, an instructor in electronics at Massachusetts Institute of Technology, has been named communications engineer at Indianapolis.

A. F. Hagy, general inspector, shops and projects, at New York, has been appointed assistant to general superintendent—passenger cars, with the same headquarters, succeeding G. R. Gividen, who has been appointed superintendent of shop—car at Beech Grove, Ind., to replace H. J. Young, retired after 40 years' service.

A. J. Lorenz, chief claim agent at

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Cleveland, has been transferred to New York, succeeding F. J. Miller, who retired December 31, after 41 years of continuous service with the NYC.

NEW YORK, ONTARIO & WESTERN.—Ferdinand J. Sieghardt, trustee, has resigned. Mr. Sieghardt had been sole trustee since the death last year of his co-trustee, Raymond L. Gebhardt.

Victor E. Konz, general agent, has

Victor E. Konz, general agent, has been appointed general eastern agent, at New York, succeeding George Young, resigned. Gerald A. Parker, commercial agent, has been named general agent, also at New York.

NORFOLK & WESTERN.— William J. Jenks, chairman of the board, retired December 31, after 66 years of service.

C. H. Hale, assistant superintendent of the Scioto division at Portsmouth, Ohio, has been appointed superintendent of Roanoke Terminals, succeeding R. A. Nelson, retired. W. O. Tracy, Jr., assistant superintendent, Radford division, at Roanoke, has been transferred to the Scioto division, to succeed Mr. Hale, and Harold E. Carter, roadmaster at Petersburg, Va., replaces Mr. Tracy as assistant superintendent of the Radford division. J. S. Bradshaw, roadmaster at Portsmouth, has been advanced to assistant

manager of roadway maintenance, filling the vacancy caused by the death of S. J. Hale.

PANHANDLE & SANTA FE.— W. A. J. Carter has been appointed trainmaster at Amarillo, Tex., succeeding F. A. Donnell, who retired January 1.

READING. — Birkett Howarth, assistant to president, has been elected assistant secretary and assistant treasurer, at Philadelphia. Byron C. Cassel, office manager in the president's office, succeeds Mr. Howarth as assistant to president.

ROCK ISLAND.—Albert F. Leppla, mechanical engineer at Chicago, retired December 31.

OBITUARY

Walter R. Dallow, 70, who retired in June 1951 as manager of the industrial development department of the New York Central System, died January 2 in Mount Vernon (N.Y.) Hospital.

S. D. Hurst, Jr., 55, executive assistant to president and assistant secretary of the Atlantic Coast Line, died of a heart attack December 26, 1953, in Wilmington, N.C.



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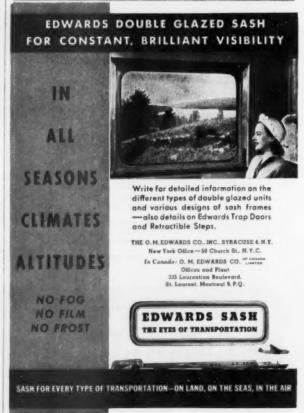




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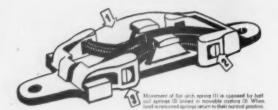
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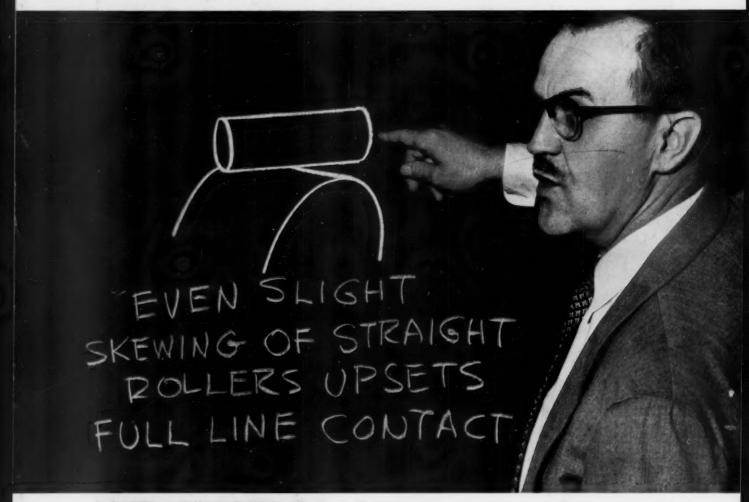
The taper makes TIMKEN® the only journal bearing that delivers what you expect when you buy a roller bearing

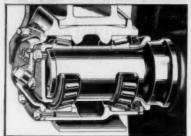
THERE are only two reasons why railroads put journals on roller bearings: (1) to end the hot box problem and (2) to cut operation and maintenance costs to a minimum. The only bearing you can count on to do both is the Timken® tapered roller bearing. Here's why: 1) Positive roller alignment. The taper keeps roller ends snug against the rib, where wide area contact keeps rollers properly aligned. No skewing of rollers to upset the full line contact, shorten the life of the bearing.

2) No lateral movement within the bearing. Lateral movement in straight roller bearings causes scuffing of rollers and races. And it pumps lubricant through the seal, drawing dirt and water in. Taking the thrust loads calls for auxiliary devices. But they're not completely effective, are hard to lubricate with grease.

Timken bearings always roll the load, never slide it. The taper prevents lateral movement, lets them take the thrust. There's no scuffing or pumping action. This helps end the hot box problem. It means less maintenance, less lubricant, longer bearing life.

Timken is the only journal bearing you can fully count on to end the hot box problem and cut operation and maintenance costs to a minimum -it's the taper! Get what you pay for. Get Timken tapered roller bearings. The Timken Roller Bearing Company, Canton 6, Ohio.





THE TAPER MAKES TIME

THE BEARING YOU TRUST

MOT JUST A BALL 🔘 MOT JUST A ROLLER 🖒 THE TIMMEN TAPERED BOLLER 🗢 BEARING TAKES RADIAL 🗘 AND THRUST 🗝 🕩 LOADS OR ANY COMBINATION 👈

